

# Growth in Arithmetic

DISCOVERY EDITION



401

$\times 2$

701

$\times 4$

640

$\times 2$

410

$\times 5$

603

$\times 3$

303

$\times 5$

3

9)270

33

4)320

3)1

3)69

7)217

8)240

4)240

5)355

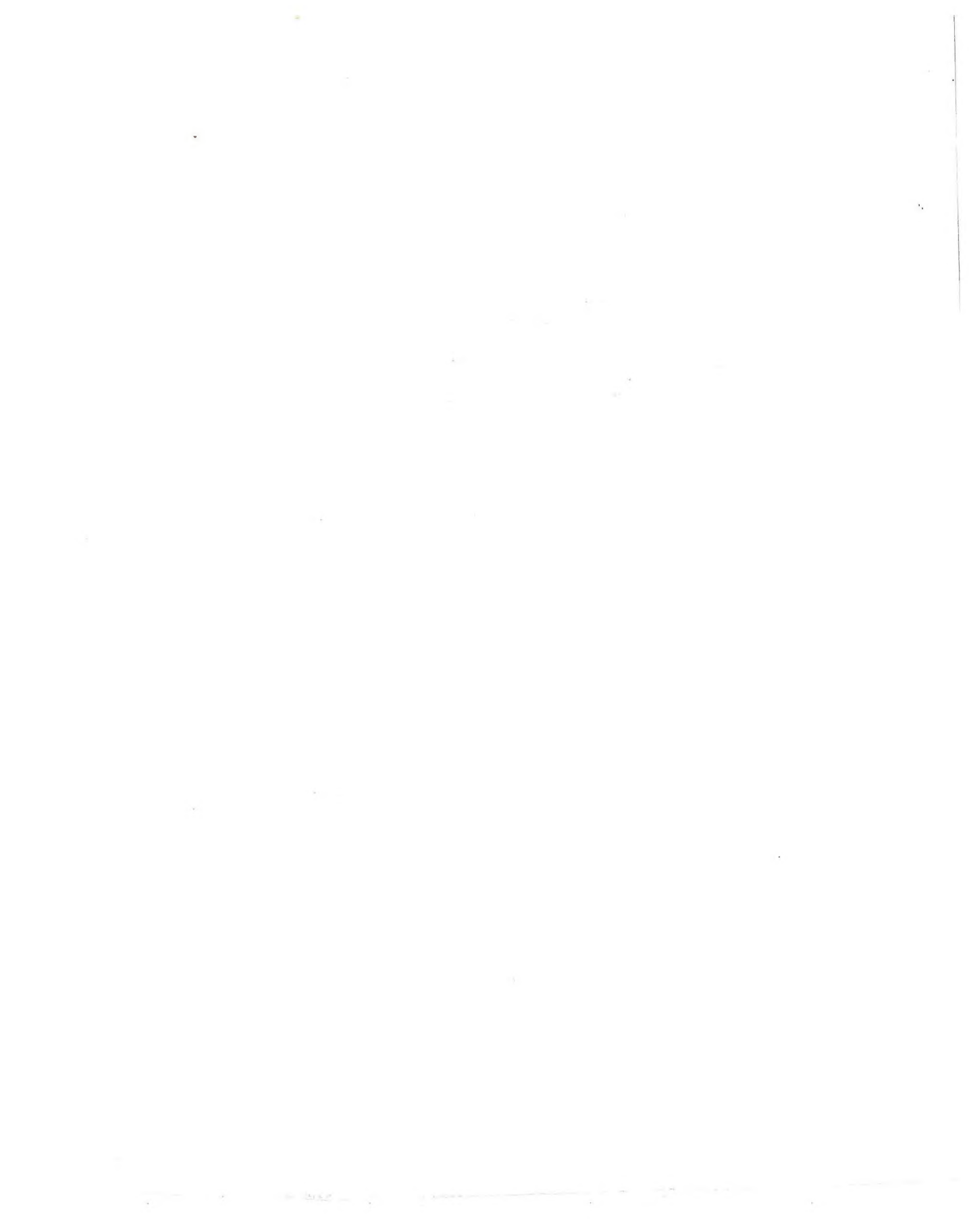
4)804

6)180

9)906







# Growth in Arithmetic

*Grade 3—Discovery Edition*





3

# Growth in Arithmetic

DISCOVERY EDITION



JOHN R. CLARK

CHARLOTTE W. JUNG

CAROLINE H. CLARK

HAROLD E. MOSER

HARCOURT, BRACE & WORLD, INC.

New York Chicago Atlanta Dallas Burlingame



# CONTENTS

<b>CHAPTER 1</b>	Relationships in counting. Using the number line. Reviewing addition. Addition on the number line. Reviewing subtraction. Subtraction on the number line. Coins. Reviewing number facts. Tens and ones. Two-place numbers. Practice with number facts. Addition and subtraction tests. Chapter test	<b>1</b>
<b>CHAPTER 2</b>	Adding three numbers. Checking addition. Adding zeros. Undoing addition by subtraction. Addition and subtraction facts of 11 and 12. Number fact families. Practice with number facts. Problem solving help. Optional problems. Review. Chapter test	<b>21</b>
<b>CHAPTER 3</b>	Measuring time. Measuring length. Measuring liquids. Measuring weight. Measuring temperature. Using the calendar. Fractions. Money. Roman numerals. Practice with measures. Review. Problem test. Chapter test	<b>41</b>
<b>CHAPTER 4</b>	Adding tens. Adding dimes and pennies. Adding two-place numbers. Subtracting dimes and pennies. Subtracting two-place numbers. Checking addition and subtraction. Addition and subtraction facts of 13. Zero difficulties in addition and subtraction. Addition and subtraction practice. Optional problems. Review. Cumulative tests. Chapter test	<b>62</b>
<b>CHAPTER 5</b>	Reading and writing three-place numbers. Addition with sums greater than 100. Subtraction with minuends greater than 100. Geometric figures. Finding missing numbers. Addition and subtraction facts of 14 and 15. Practice with number facts. Problem test. Chapter test	<b>83</b>
<b>CHAPTER 6</b>	Changing pennies to a dime in addition. Changing ones to a ten in addition. Fractions. Changing a dime to pennies in subtraction. Changing a ten to ones in subtraction. The nearest ten. Estimating answers. Addition and subtraction facts of 16. Addition and subtraction practice. Review. Cumulative tests. Chapter test	<b>103</b>
<b>CHAPTER 7</b>	Key facts in addition. Addition and subtraction facts of 17 and 18. Test on addition and subtraction facts. Oral and written practice. Review. Problem test. Chapter test	<b>123</b>
<b>CHAPTER 8</b>	Writing dates. Measurement problems. Addition and subtraction practice. Problem solving help. Review. Cumulative tests. Chapter test	<b>139</b>



**CHAPTER 9** The nearest hundred. Adding dollars and cents. Adding three-place numbers. Changing pennies to dimes. Changing tens to ones. Working with money. Changing dimes to dollars. Changing tens to hundreds. Changing twice in addition. Estimating answers. Addition practice. Review. Problem test. Chapter test **151**

**CHAPTER 10** Getting ready for multiplication and division. Using dimes. Changing nickels to pennies. Changing pennies to nickels. Practice with money. Problem solving help. Review. Cumulative tests. Chapter test **172**

**CHAPTER 11** Using fives in multiplication. Multiplication facts of fives. Dividing by five. Division facts of fives. Missing numbers in multiplication. Multiplication-division fact families. Finding one fifth of a number. Remainders and helping numbers. Oral and written practice. Review. Problem test. Chapter test **187**

**CHAPTER 12** Using twos in multiplication. Multiplication facts of twos. Dividing by two. Division facts of twos. Remainders and helping numbers. Finding one half of a number. Two uses of division. Multiplying by 1. Dividing by 1. Practice and problems. Problem solving help. Cumulative tests. Chapter test **214**

**CHAPTER 13** Subtracting three-place numbers. Changing a dime to pennies. Changing a ten to ones. Changing a dollar to dimes. Changing twice in subtraction. Changing a dollar to dimes and pennies. Reading and writing thousands. Oral and written practice. Review. Problem test. Chapter test **236**

**CHAPTER 14** Zeros in multiplication. Multiplying tens. Multiplying two-place numbers. Changing in multiplication. Dividing zero. Dividing tens. Dividing tens and ones. Dividing three-place numbers. Remainders in division. Multiplying three-place numbers. Estimating answers. Changing twice in multiplication. Oral and written practice. Optional problems. Problem solving help. Cumulative tests. Chapter test **259**

**CHAPTER 15** Using threes in multiplication. Multiplication facts of threes. Division facts of threes. Finding one third of a number. Using fours in multiplication. Multiplication facts of fours. Using fours in division. Division facts of fours. Finding one fourth of a number. Remainders and helping numbers. Three-place quotients. Oral and written practice. Problem solving help. Review. Problem test. Chapter test **287**

Practice for excellence **314**

Index **327**









## How many?

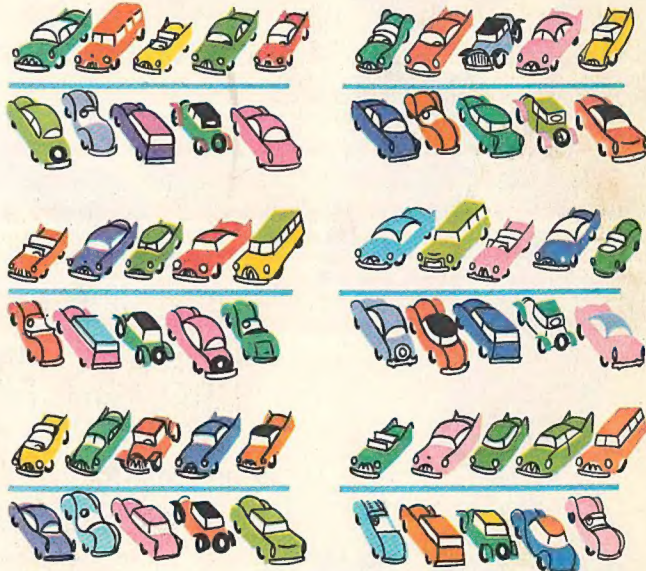
1. Look at the picture of the children getting on the bus. Count them by 1's.
2. There are   ?   boys. There are   ?   girls.
3. There are   ?   children all together.
4. Are there *more* boys than girls? Are there *fewer* girls than boys? There are   ?   more boys than girls.

5. Now look at the picture above. How many children are on the bus? Count them by 2's.

Did all ten children get on the bus?

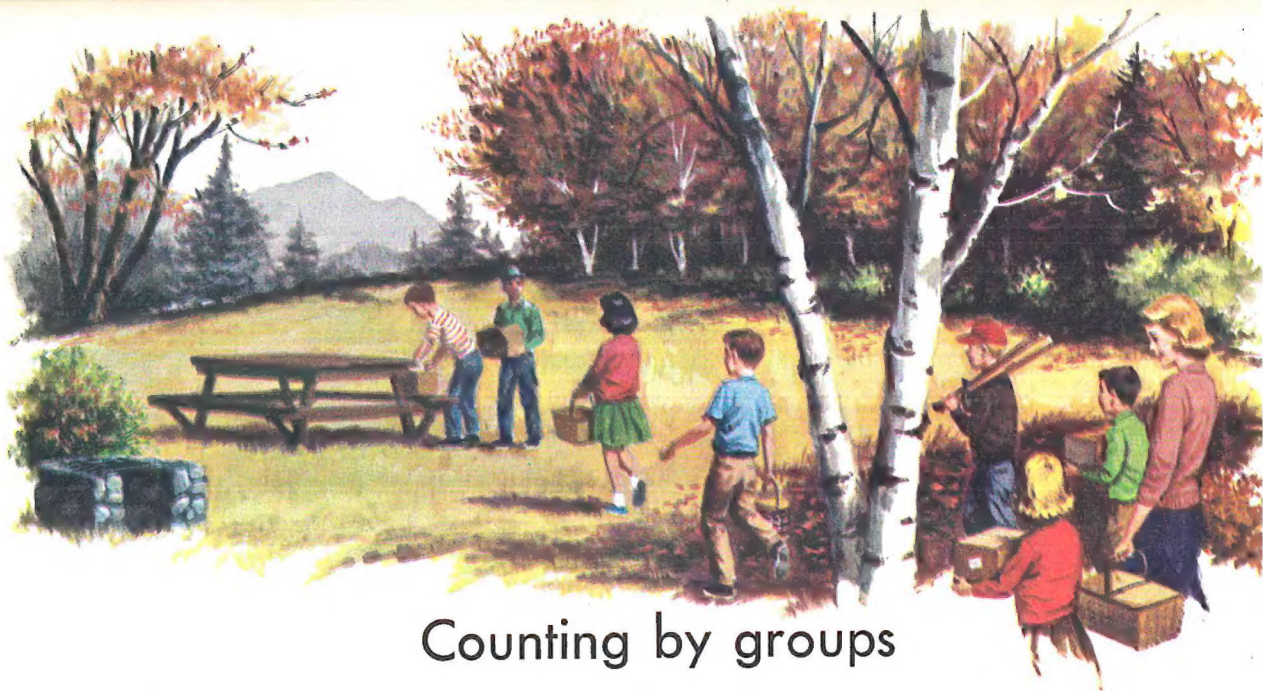
6. Which is faster, counting by 1's or counting by 2's?

7. Count these cars by 10's. Count them by 5's. Which is faster, counting by 5's or counting by 10's?



8. Count to 100:    by 1's    by 2's    by 5's    by 10's.





## Counting by groups

1. These children need 20 hot dogs for their picnic. Count the hot dogs by 10's. Count them by 2's. Have they enough?



2. They need 20 apples. Count the apples by 5's.

Have they enough? more than enough?



3. The children need 20 rolls. Count the rolls by 3's. Have they enough?

How many more do they need?



Think twice!

4. Count the rolls by 6's.

5. Count the paper cups by 4's. How many more do you need to have 20 cups?



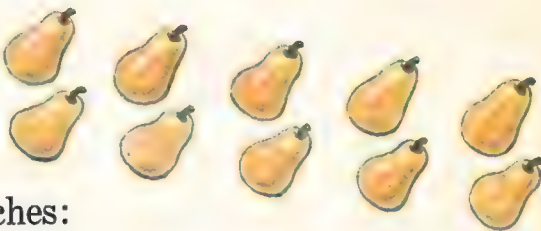
# Facts that counting teaches

1. Count the bananas by 1's. Counting the bananas by 1's teaches the *number fact*, 1 and 1 are 2. Does it teach the number fact, 2 and 1 are 3?

Tell seven other number facts that it teaches.

2. Count the pears by 2's. This teaches:

- 2 and 2 are 4.
- 4 and 2 are 6.
- 6 and 2 are 8.
- 8 and 2 are 10.
- 2 twos are   ?  .
- 3 twos are   ?  .
- 4 twos are   ?  .
- 5 twos are   ?  .



3. Count the cakes by 4's. This teaches:

- 4 and 4 are   ?  .
- 8 and 4 are   ?  .
- 2 fours are   ?  .
- 3 fours are   ?  .

4. Count the cakes by 3's, by 6's.

- 3 and 3 are   ?  .
- 6 and 3 are   ?  .
- 9 and 3 are   ?  .
- 6 and 6 are   ?  .
- 2 threes are   ?  .
- 3 threes are   ?  .
- 4 threes are   ?  .
- 2 sixes are   ?  .



— Tell the answers. Then write the answers.

*a*

5. 8 and 1 are   ?  .

6. 6 and 6 are   ?  .

7. 6 and 2 are   ?  .

8. 8 and 4 are   ?  .

*b*

2 and 2 are   ?  .

4 and 4 are   ?  .

8 and 2 are   ?  .

9 and 3 are   ?  .

*c*

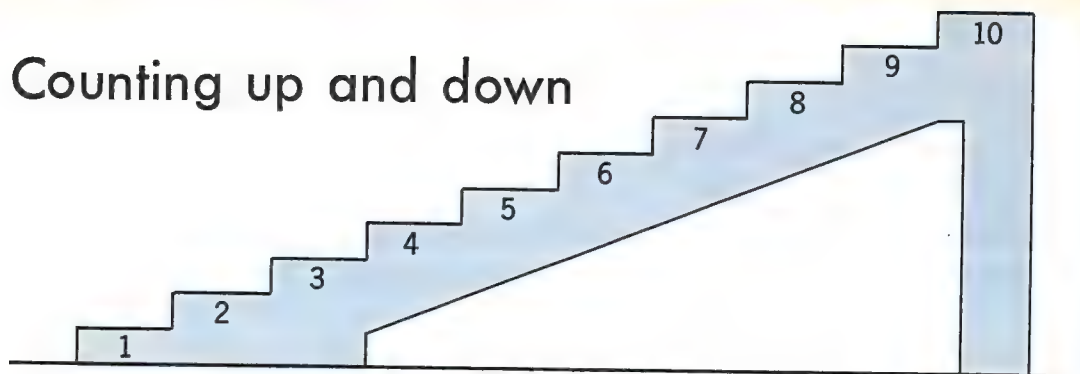
7 and 1 are   ?  .

3 and 3 are   ?  .

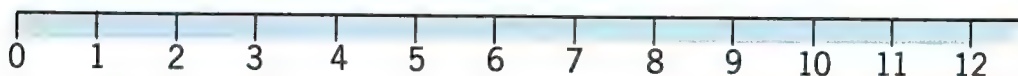
4 and 2 are   ?  .

6 and 3 are   ?  .

# Counting up and down



1. Go up the steps. Count as you go.  
Come down the steps. Count backward.
2. Counting backward by 1's teaches these number facts:  
10 take away 1 is 9      9 take away 1 is 8  
Find other number facts by counting backward by 1's.
3. Go up the steps 2 at a time. Count by 2's as you go.
4. Come down the steps 2 at a time. Counting backward by 2's teaches that 10 take away 2 is 8.  
Find other facts that it teaches.



5. Count by 3's to 12. Count backward by 3's from 12.  
Counting backward by 3's teaches 12 take away 3 is 9. Find other facts that it teaches.
  6. Count by 4's to 12. Count backward by 4's from 12. What facts does counting backward by 4's teach?
- Tell the answers. Then write the answers.

- |                                     |                                  |                                  |
|-------------------------------------|----------------------------------|----------------------------------|
| <i>a</i>                            | <i>b</i>                         | <i>c</i>                         |
| 7. 8 take away 1 is <u>  ?  </u> .  | 9 take away 3 is <u>  ?  </u> .  | 6 take away 2 is <u>  ?  </u> .  |
| 8. 6 take away 1 is <u>  ?  </u> .  | 12 take away 4 is <u>  ?  </u> . | 10 take away 2 is <u>  ?  </u> . |
| 9. 4 take away 2 is <u>  ?  </u> .  | 6 take away 3 is <u>  ?  </u> .  | 8 take away 2 is <u>  ?  </u> .  |
| 10. 7 take away 1 is <u>  ?  </u> . | 12 take away 3 is <u>  ?  </u> . | 8 take away 4 is <u>  ?  </u> .  |



# Up and down the number line

On this number line the distance between any number and the next is called a step.

— How many steps do you take to go:

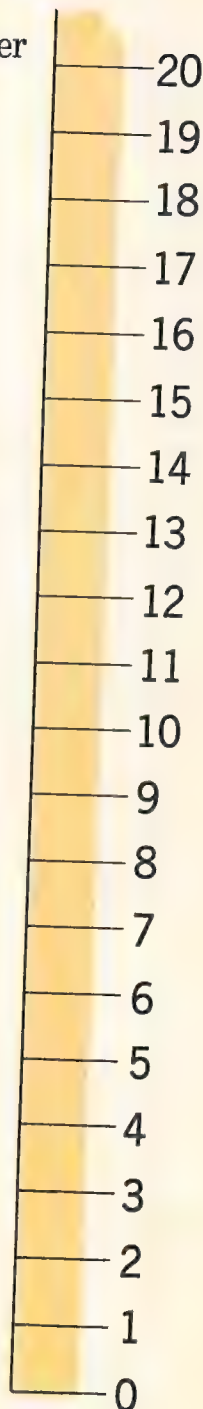
- |                   |                   |
|-------------------|-------------------|
| 1. from 5 to 10?  | 4. from 15 to 20? |
| 2. from 10 to 15? | 5. from 0 to 5?   |
| 3. from 2 to 10?  | 6. from 12 to 20? |

— How many steps do you take to go:

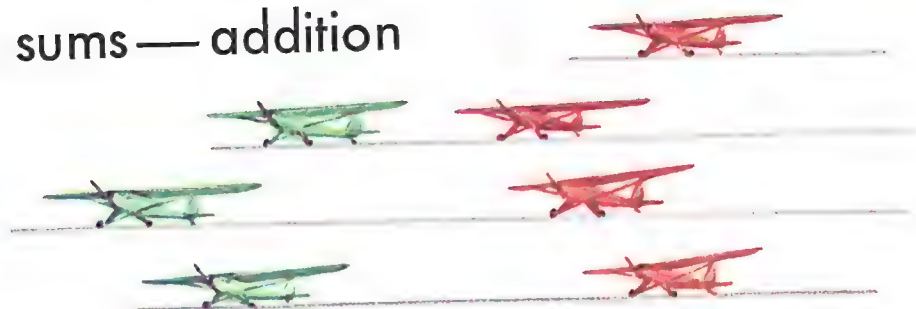
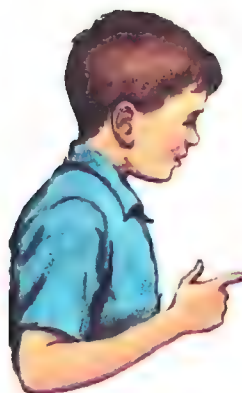
- |                   |                    |
|-------------------|--------------------|
| 7. from 14 to 10? | 10. from 4 to 0?   |
| 8. from 20 to 10? | 11. from 10 to 0?  |
| 9. from 9 to 5?   | 12. from 17 to 13? |
13. Count as you go up the number line 2 steps at a time; 5 steps at a time; 4 steps at a time.
14. Begin at 20. Count as you go down 2 steps at a time; 4 steps at a time; 5 steps at a time.

— Find the number that is:

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| 15. 2 more than 5.<br>2 more than 15. | 19. 2 less than 9.<br>2 less than 19. |
| 16. 3 more than 6.<br>3 more than 16. | 20. 3 less than 4.<br>3 less than 14. |
| 17. 4 more than 3.<br>4 more than 13. | 21. 3 less than 5.<br>3 less than 15. |
| 18. 5 more than 4.<br>5 more than 14. | 22. 4 less than 6.<br>4 less than 16. |



# Finding sums — addition



1. There are 3 green planes and 4 red planes in the picture. 3 planes and 4 planes are   7   planes. 3 and 4 are   7  .

When you say “3 and 4 are 7,” you *add* 3 and 4.  
 $3 + 4 = 7$  is an *addition fact*.

## WAYS TO WRITE AN ADDITION

$$3 + 4 = 7 \quad \begin{array}{r} 3 \\ + 4 \\ \hline 7 \end{array}$$

## WAYS TO SAY AN ADDITION

“3 and 4 are 7.”  
 “3 plus 4 equals 7.”

The sign  $+$  is a *plus sign*. It tells you to add.  
 The sign  $=$  is an *equal sign*.  
 The answer in addition is called a *sum*.

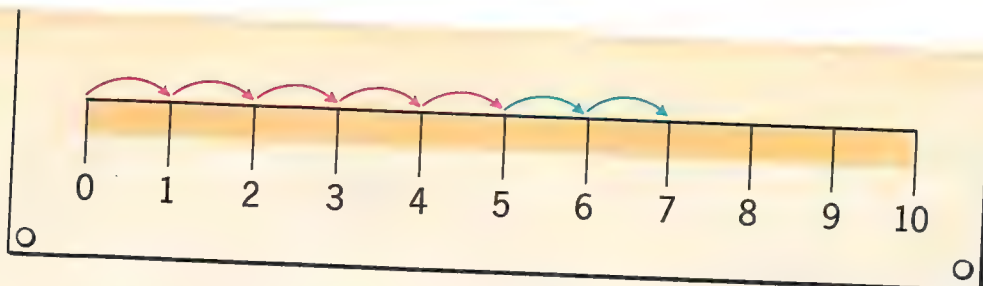
— Tell each sum. Then write each addition in two ways.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
2.	$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$
3.	$\begin{array}{r} 1 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 2 \\ \hline \end{array}$

Think twice!

Write 5 additions in which the sum is 10.





## Addition practice

1. To find the sum of 5 and 2 on the number line Jim took 5 steps to the right. Then he took 2 steps more. He stopped at ?. This shows that  $5 + 2 = \underline{\quad}$ . Find  $2 + 5$  on the number line.

— Read the additions below and tell the sums. Use the number line if you need help.

- |   |  |  |  |  |
|---|--|--|--|--|
| <i>a</i>                                      | <i>b</i>                                   | <i>c</i>                                   | <i>d</i>                                   | <i>e</i>                                   |
| 2. $\begin{cases} 3 + 2 \\ 2 + 3 \end{cases}$ | $\begin{cases} 7 + 1 \\ 1 + 7 \end{cases}$ | $\begin{cases} 5 + 3 \\ 3 + 5 \end{cases}$ | $\begin{cases} 6 + 4 \\ 4 + 6 \end{cases}$ | $\begin{cases} 4 + 3 \\ 3 + 4 \end{cases}$ |
| 3. $\begin{cases} 1 + 9 \\ 9 + 1 \end{cases}$ | $\begin{cases} 4 + 2 \\ 2 + 4 \end{cases}$ | $\begin{cases} 6 + 1 \\ 1 + 6 \end{cases}$ | $\begin{cases} 7 + 2 \\ 2 + 7 \end{cases}$ | $\begin{cases} 6 + 2 \\ 2 + 6 \end{cases}$ |

4. Copy and find the answers.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
$\begin{array}{r} 6 \quad 3 \\ +3 \quad +6 \end{array}$	$\begin{array}{r} 8 \quad 2 \\ +2 \quad +8 \end{array}$	$\begin{array}{r} 5 \quad 4 \\ +4 \quad +5 \end{array}$	$\begin{array}{r} 7 \quad 3 \\ +3 \quad +7 \end{array}$

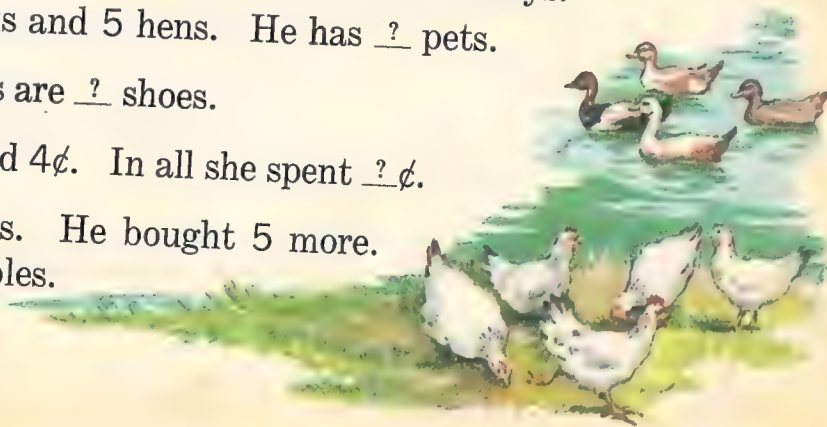
— Find the answers. Write each addition in two ways.

5. Ralph has 4 ducks and 5 hens. He has ? pets.

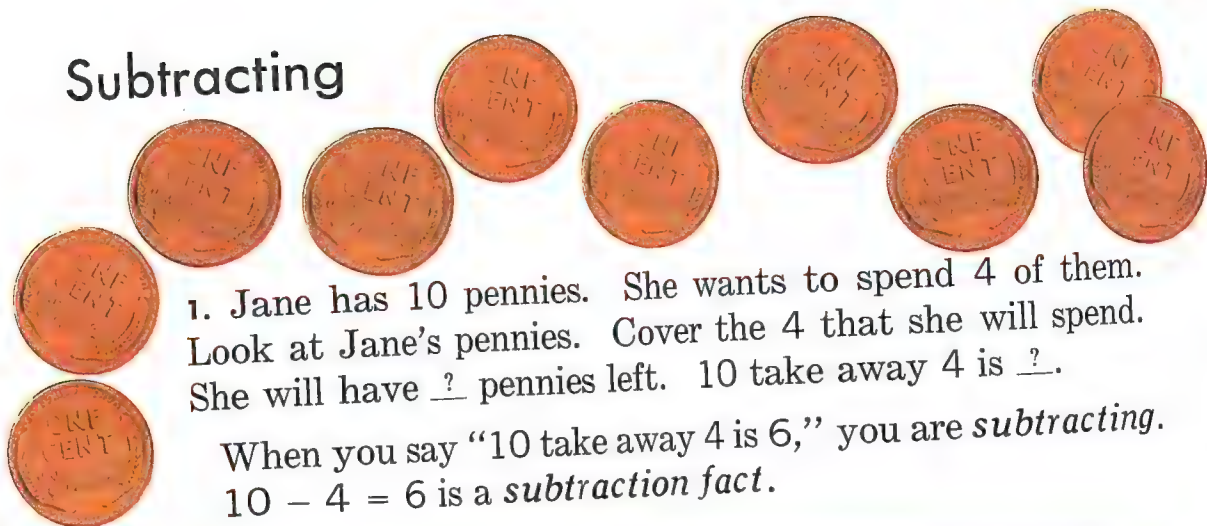
6. Two pairs of shoes are ? shoes.

7. Linda spent 6¢ and 4¢. In all she spent ?¢.

8. Joe had 3 marbles. He bought 5 more. Now he has ? marbles.



# Subtracting



1. Jane has 10 pennies. She wants to spend 4 of them. Look at Jane's pennies. Cover the 4 that she will spend. She will have ? pennies left. 10 take away 4 is ?.

When you say "10 take away 4 is 6," you are *subtracting*.  
 $10 - 4 = 6$  is a *subtraction fact*.

## WAYS TO WRITE SUBTRACTION

$$10 - 4 = 6$$

$$\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$$

## WAYS TO SAY SUBTRACTION

"4 from 10 is 6."  
 "10 take away 4 is 6."  
 "10 minus 4 is 6."

The sign  $-$  is a *minus sign*. It tells you to subtract.

2. Tell the answers. Then write each subtraction in two ways.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>
8	7	9	7	10	8	10	9	9	10	6
<u>-5</u>	<u>-4</u>	<u>-5</u>	<u>-5</u>	<u>-7</u>	<u>-6</u>	<u>-4</u>	<u>-2</u>	<u>-6</u>	<u>-3</u>	<u>-4</u>

3. Which number fact below will you use to solve this problem?

Jim has 7 marbles. He plans to give 3 to Ben. He will have ? left.

$$7 - 4 = 3$$

$$7 - 3 = 4$$

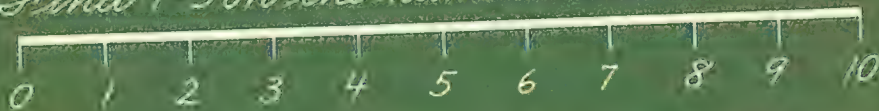
$$7 + 3 = 10$$





# Subtraction practice

*Find  $7-2$  on the number line. Start with 7.  
Count 2 steps back. You stop at 5.  $7-2=5$   
Find  $7-5$  on the number line.*



— Tell the answers. Use the number line if you need help.

- |   |  |  |  |  |
|---|--|--|--|--|
| <i>a</i>                                    | <i>b</i>                                 | <i>c</i>                               | <i>d</i>                                 | <i>e</i>                                 |
| 1. $\begin{cases} 8-1 \\ 8-7 \end{cases}$   | $\begin{cases} 10-2 \\ 10-8 \end{cases}$ | $\begin{cases} 9-1 \\ 9-8 \end{cases}$ | $\begin{cases} 5-2 \\ 5-3 \end{cases}$   | $\begin{cases} 10-1 \\ 10-9 \end{cases}$ |
| 2. $\begin{cases} 10-7 \\ 10-3 \end{cases}$ | $\begin{cases} 8-2 \\ 8-6 \end{cases}$   | $\begin{cases} 9-5 \\ 9-4 \end{cases}$ | $\begin{cases} 10-4 \\ 10-6 \end{cases}$ | $\begin{cases} 6-2 \\ 6-4 \end{cases}$   |

— Copy and write the answers.

- |  |   |   |   |
|--|---|---|---|
| <i>a</i>   | <i>b</i>  | <i>c</i>  | <i>d</i>  |
| 3. $\begin{array}{r} 8 \quad 8 \\ -3 \quad -5 \end{array}$ | $\begin{array}{r} 9 \quad 9 \\ -3 \quad -6 \end{array}$ | $\begin{array}{r} 7 \quad 7 \\ -3 \quad -4 \end{array}$ | $\begin{array}{r} 9 \quad 9 \\ -2 \quad -7 \end{array}$ |
| 4. $8-4=4$ , so $8-5=\underline{\quad?}\quad$              | 7. $7-1=6$ , so $7-2=\underline{\quad?}\quad$           |   |   |
| 5. $10-5=5$ , so $10-4=\underline{\quad?}\quad$            | 8. $8-1=7$ , so $8-2=\underline{\quad?}\quad$           |   |   |
| 6. $9-3=6$ , so $9-2=\underline{\quad?}\quad$              | 9. $9-8=1$ , so $9-7=\underline{\quad?}\quad$           |   |   |

— Watch the signs!

- |   |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|
| <i>a</i>                                    | <i>b</i>                               | <i>c</i>                               | <i>d</i>                               | <i>e</i>                               | <i>f</i>                               | <i>g</i>                               | <i>h</i>                               | <i>i</i>                               |
| 10. $\begin{array}{r} 10 \\ -5 \end{array}$ | $\begin{array}{r} 5 \\ +4 \end{array}$ | $\begin{array}{r} 3 \\ +6 \end{array}$ | $\begin{array}{r} 8 \\ -4 \end{array}$ | $\begin{array}{r} 3 \\ +5 \end{array}$ | $\begin{array}{r} 2 \\ +7 \end{array}$ | $\begin{array}{r} 6 \\ -3 \end{array}$ | $\begin{array}{r} 3 \\ +7 \end{array}$ | $\begin{array}{r} 2 \\ +5 \end{array}$ |



**QUARTER**  
25¢



**NICKEL**  
5¢



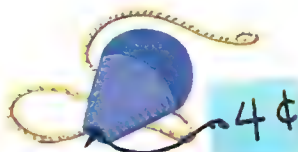
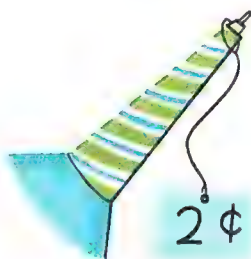
**PENNY**  
1¢

## Coins you use



**DIME**  
10¢

1. A 5-cent piece is called a   ?  .
2. A 10-cent piece is called a   ?  .
3. A 25-cent piece is called a   ?  .
4. Could Joe trade a nickel for 5 pennies?
5. He could trade a dime for   ?   pennies.
6. He could trade a dime for   ?   nickels.
7. Would you trade a quarter for:
  - 2 dimes and 1 nickel?
  - 2 nickels and 1 dime?
  - 15 pennies and 1 dime?
  - 3 nickels and 1 dime?
  - 25 pennies? 4 nickels? 5 nickels? 2 dimes?
8. Use coins. Count to find how many pennies you can get for 10 dimes; 10 nickels.
9. Read the price of each toy.
10. What coins could you give to pay for each toy?
11. Ted has 4¢. Can he buy:
  - 2 balloons and 1 horn?
  - 2 horns?
  - 1 balloon and a top?
  - 4 balloons?
12. Jane has a nickel. What can she buy?
13. Ted has 6¢. What can he buy?
14. Jim has 10¢. How much will he have left if he spends 4¢? 5¢? 6¢? 7¢? 8¢? 9¢?





# Number fact helps



## Help from coins

1. The coins in picture A show these facts:

$$5 + 1 = 6 \quad 1 + 5 = 6 \quad 6 - 1 = 5 \quad 6 - 5 = 1$$

What facts do each of the other pictures show?

## Help from number families

2. Why are the four number facts below called a *number family*?

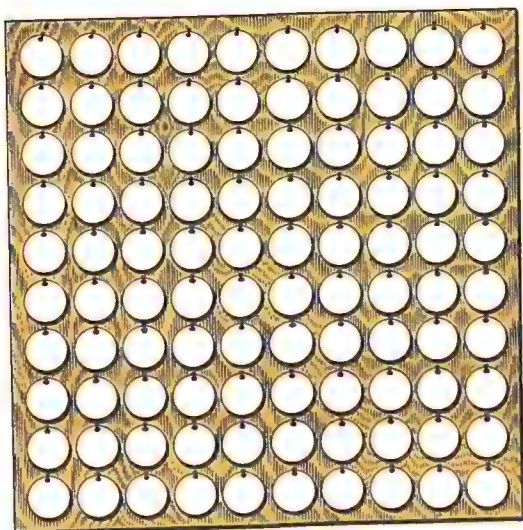
$$3 + 4 = 7 \quad 4 + 3 = 7 \quad 7 - 3 = 4 \quad 7 - 4 = 3$$

— Name the three other members in the family of each fact.

- |                 |                 |                  |
|-----------------|-----------------|------------------|
| 3. $4 + 5 = 9$  | 6. $8 - 3 = 5$  | 9. $9 - 2 = 7$   |
| 4. $2 + 5 = 7$  | 7. $9 + 1 = 10$ | 10. $5 - 2 = 3$  |
| 5. $10 - 4 = 6$ | 8. $3 + 6 = 9$  | 11. $10 - 3 = 7$ |

## Help from doubles

12.  $2 + 2 = 4$ , so  $2 + 3 = ?$ .      16. Tell how you can use doubles to learn these:
13.  $3 + 3 = 6$ , so  $3 + 4 = ?$ .
14.  $4 + 4 = 8$ , so  $4 + 5 = ?$ .       $2 + 1 = ?$        $4 + 3 = ?$
15.  $5 + 5 = 10$ , so  $5 + 6 = ?$ .       $3 + 2 = ?$        $5 + 4 = ?$



## Ten-Tens Counter



1. The Ten-Tens Counter has:

   tags in each row.

   rows of tags.

   tags in 2 rows.

   tags in 3 rows.

2. Count all the tags by 10's.

3. How many are:

2 tens?    3 tens?    5 tens?

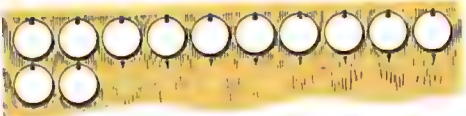
8 tens?    6 tens?    10 tens?

4.



10 and 1 are   .

5.



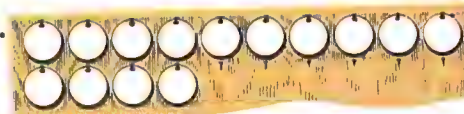
10 and 2 are   .

6.



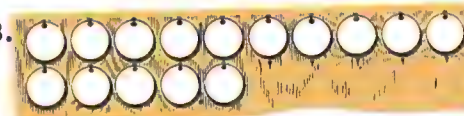
10 and 3 are   .

7.



10 and 4 are   .

8.



10 and 5 are   .

9. 10 and 6 are   .

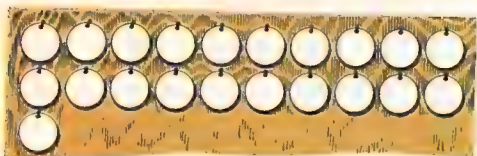
10. 10 and 7 are   .

11. 10 and 8 are   .

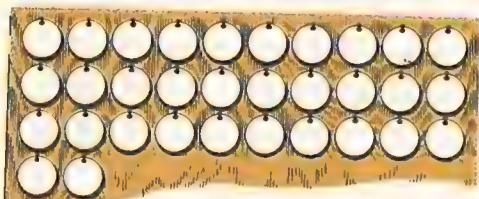
12. 10 and 9 are   .



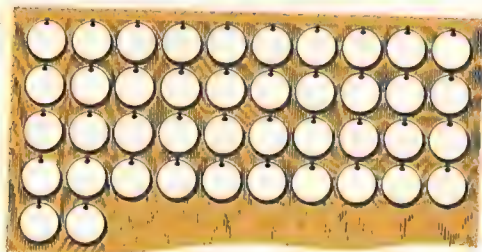
# Tens and ones



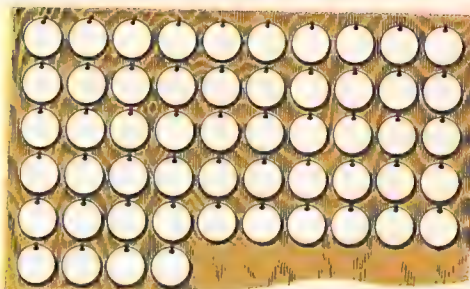
1. 2 tens are   ?  .  
2 tens and 1 are   ?  .  
2 tens and 2 are   ?  .  
2 tens and 3 are   ?  .  
2 tens and 7 are   ?  .



2. 3 tens are   ?  .  
3 tens and 2 are   ?  .  
3 tens and 5 are   ?  .  
3 tens and 7 are   ?  .  
3 tens and 9 are   ?  .



3. 4 tens and 2 are   ?  .  
4 tens and 5 are   ?  .  
4 tens and 8 are   ?  .  
4 tens and 9 are   ?  .

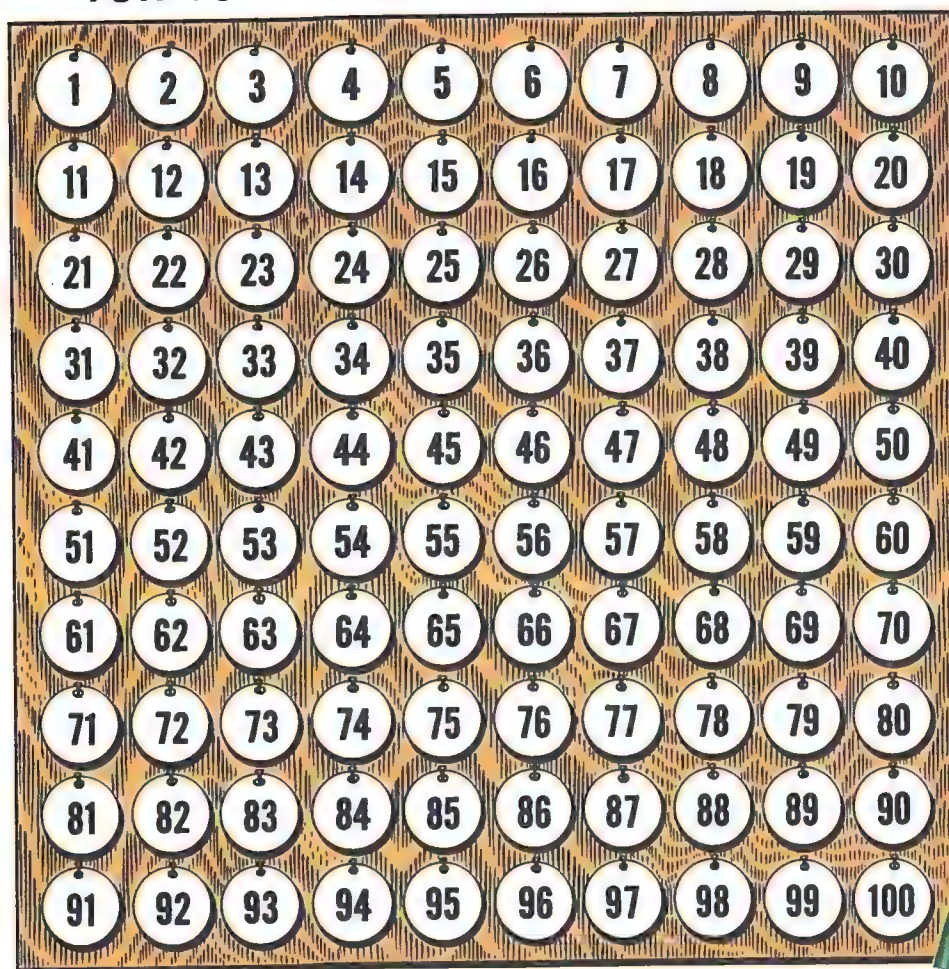


4. 5 tens and 4 are   ?  .  
5 tens and 9 are   ?  .
5. 6 tens and 6 are   ?  .  
6 tens and 8 are   ?  .

— Use the Ten-Tens Counter on page 12 to find these answers.

6. 7 tens and 3 are   ?  .  
7 tens and 6 are   ?  .
7. 8 tens and 2 are   ?  .  
8 tens and 8 are   ?  .
8. 9 tens and 5 are   ?  .  
9 tens and 9 are   ?  .
9. 5 tens and 7 are   ?  .  
7 tens and 5 are   ?  .
10. 6 tens and 5 are   ?  .  
8 tens and 3 are   ?  .
11. Which is more, 3 tens and 5 or 5 tens and 3? Explain.

# Ten-Tens Chart



1. Point to the chart and count the tags by 1's; by 10's; by 5's; by 2's.

2. Read the number that tells how many tags there are in:

1 row      2 rows      3 rows      6 rows      7 rows      9 rows

— Read the number that means:

3. 4 tens      5 tens      8 tens      10 tens

4. 1 ten and 6      5 tens and 6      3 tens and 2      4 tens and 7

5. 6 tens and 7      2 tens and 1      9 tens and 5      7 tens and 2



## Tens and ones

— Use the chart on page 14. Read the number that means:

1. 10 and 5      20 and 8      30 and 7      40 and 3

2. 50 and 6      60 and 5      70 and 7      90 and 8

— Use the chart to find the missing numbers.

3. 37 means    tens and   .      6. 11 means    ten and   .

4. 48 means    tens and   .      7. 54 means    tens and   .

5. 65 means    tens and   .      8. 72 means    tens and   .

9. Point to the chart as you count.

- Begin with 5. Count by 10's to 95.
- Begin with 7. Count by 10's to 97.
- Begin with 2. Count by 10's to 92.

10. Which is larger: 64 or 46? 35 or 53? 27 or 72?

— Write the number that comes:

11. just after 39      just after 79      just after 99

12. just before 50      just before 70      just before 100

— Write the number that is:

13. 10 more than 40      10 more than 25      10 more than 72

14. 10 less than 30      10 less than 43      10 less than 84

15. 11 more than 60      12 more than 30      13 more than 50

# Dimes and pennies — tens and ones



1. Point to the coins and count this way:  
 “10 cents, 20 cents, 30 cents, 34 cents.”  
 3 dimes and 4 pennies =   ¢.



In 34¢ { the 3 shows the number of   .  
 the 4 shows the number of   .

In 29 { the    shows the number of tens.  
 the    shows the number of ones.

— Use coins to show that:

2. 3 dimes and 6 pennies are   ¢  $\longrightarrow$  3 tens and 6 are   .
3. 5 dimes and 7 pennies are   ¢  $\longrightarrow$  5 tens and 7 are   .
4. 2 dimes and 4 pennies are   ¢  $\longrightarrow$  2 tens and 4 are   .
5. 4 dimes and 4 pennies are   ¢  $\longrightarrow$  4 tens and 4 are   .
6. 8 dimes and 6 pennies are   ¢  $\longrightarrow$  8 tens and 6 are   .
7. 6 dimes and 8 pennies are   ¢  $\longrightarrow$  6 tens and 8 are   .
8. Which is more: 4 tens and 6, or 64? Why?
9. Write the numbers from 67 to 80; from 88 to 100.

10. Write the number that means:

4 tens and 3  
 9 tens and 8

6 tens and 7  
 7 tens and 4

8 tens and 9  
 4 tens and 6

Think twice!

— Write the number that is:

11. 11 less than 50      12 less than 40      13 less than 60
12. 21 less than 50      32 less than 40      43 less than 60



## Some new words

Jane says 52 is a *2-place* number.

- The 5 in *tens place* means 5 tens.
- The 2 in *ones place* means 2 ones.
- In 52, the 5 and the 2 are called *digits*.
- The ten *digits* are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0.
- The digit 0 is read *zero*. *Zero* means *not any*.



1. 50 means   ? tens,   ? ones.  $\longrightarrow$

The 5 in tens place shows the number of tens.

The 0 in ones place shows the number of ones.

2. 51 means   ? tens   ? one.  $\longrightarrow$

The 5 is in   ? place. The 1 is in   ? place.

3. 49 means   ? tens   ? ones.  $\longrightarrow$

4. 94 means   ? tens   ? ones.  $\longrightarrow$

Tens	Ones
5	0
5	1
4	9
9	4

5. Write, then read these numbers:

- a 2-place number with the digit 7 in tens place.
- a 2-place number with the digit 2 in ones place.
- a 2-place number with the digit 0 in ones place.

6. In 25 is the 2 worth more than the 5? Explain.

Think twice!

7. How many 2-place numbers are there?

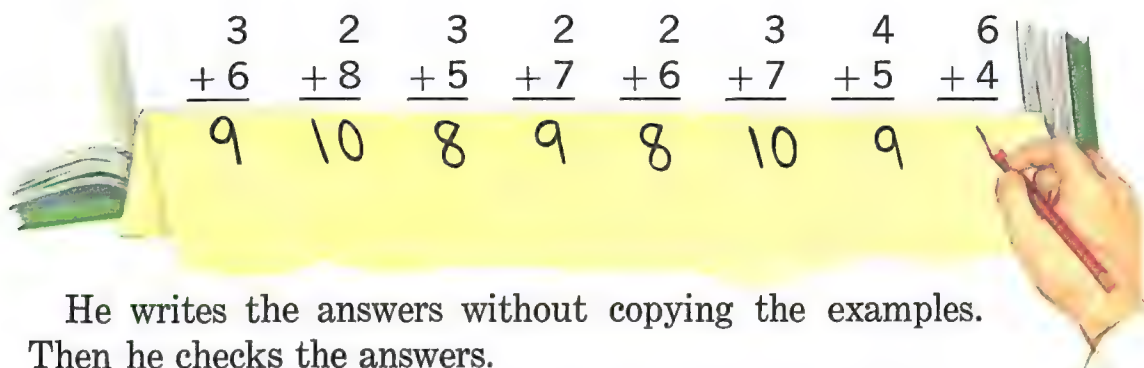
8. How much smaller do you make this number:  $\rightarrow$

- when you change the 9 in ones place to a 4?
- when you change the 9 in tens place to a 4?



# Remembering facts

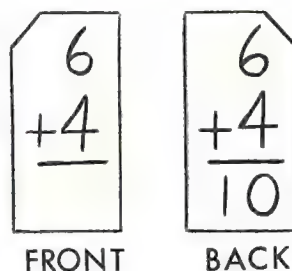
Ben gives himself a test to find which number facts he needs to study. He uses folded paper for the test.



He writes the answers without copying the examples. Then he checks the answers.

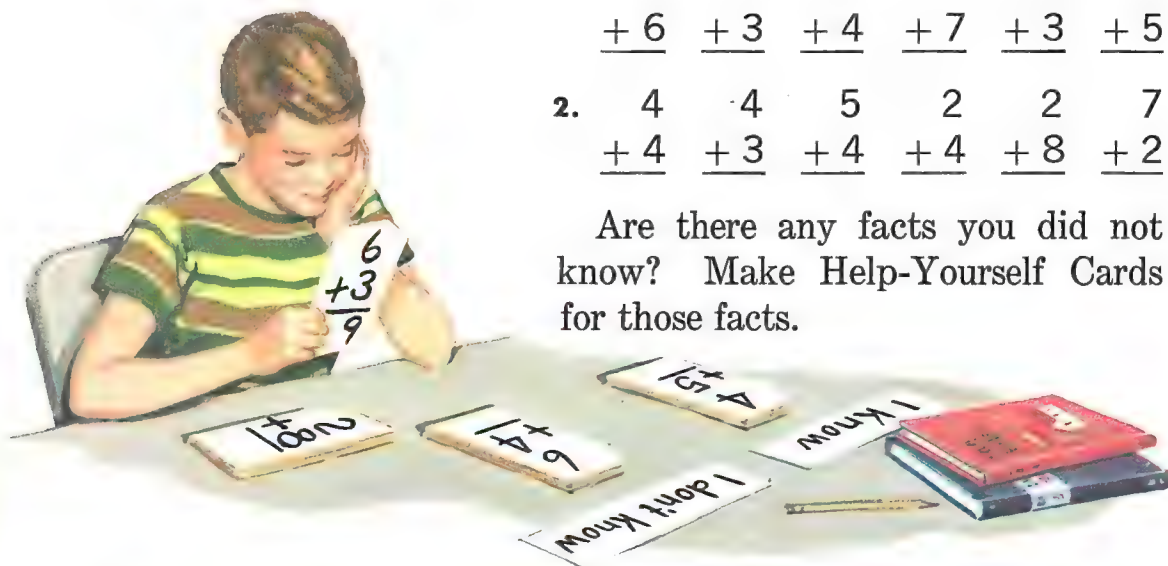
He makes Help-Yourself Cards like these for facts that he does not know.  $\longrightarrow$

— Write the answers to Exercises 1 and 2 on folded paper as shown above.



1.    3    7    6    2    6    2  
 $+6$     $+3$     $+4$     $+7$     $+3$     $+5$
2.    4    4    5    2    2    7  
 $+4$     $+3$     $+4$     $+4$     $+8$     $+2$

Are there any facts you did not know? Make Help-Yourself Cards for those facts.





# Addition and subtraction tests

— Write the sums on folded paper.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1. 5 <u>+ 4</u>	3 <u>+ 3</u>	8 <u>+ 2</u>	5 <u>+ 1</u>	2 <u>+ 6</u>	5 <u>+ 5</u>	2 <u>+ 3</u>	1 <u>+ 1</u>	8 <u>+ 1</u>
2. 4 <u>+ 4</u>	3 <u>+ 2</u>	4 <u>+ 6</u>	4 <u>+ 2</u>	2 <u>+ 8</u>	4 <u>+ 3</u>	1 <u>+ 4</u>	1 <u>+ 7</u>	2 <u>+ 1</u>
3. 3 <u>+ 1</u>	1 <u>+ 8</u>	5 <u>+ 3</u>	2 <u>+ 4</u>	3 <u>+ 5</u>	2 <u>+ 7</u>	5 <u>+ 2</u>	3 <u>+ 7</u>	4 <u>+ 1</u>
4. 3 <u>+ 7</u>	4 <u>+ 5</u>	2 <u>+ 2</u>	7 <u>+ 2</u>	1 <u>+ 9</u>	6 <u>+ 2</u>	2 <u>+ 5</u>	1 <u>+ 2</u>	7 <u>+ 1</u>

Make Help-Yourself Cards for the facts you did not know. Practice until you can say every sum.

— Write the answers on folded paper.

1. 6 <u>- 4</u>	5 <u>- 1</u>	3 <u>- 2</u>	8 <u>- 1</u>	10 <u>- 7</u>	4 <u>- 1</u>	6 <u>- 5</u>	10 <u>- 3</u>	9 <u>- 2</u>
2. 10 <u>- 5</u>	5 <u>- 3</u>	4 <u>- 3</u>	8 <u>- 6</u>	7 <u>- 2</u>	10 <u>- 9</u>	2 <u>- 1</u>	6 <u>- 2</u>	7 <u>- 4</u>
3. 8 <u>- 3</u>	7 <u>- 1</u>	6 <u>- 3</u>	8 <u>- 2</u>	7 <u>- 6</u>	5 <u>- 2</u>	6 <u>- 1</u>	9 <u>- 4</u>	4 <u>- 2</u>
4. 10 <u>- 2</u>	8 <u>- 5</u>	9 <u>- 6</u>	7 <u>- 3</u>	10 <u>- 8</u>	9 <u>- 1</u>	9 <u>- 8</u>	8 <u>- 7</u>	10 <u>- 6</u>

Make Help-Yourself Cards for the facts you did not know. Practice until you can say every answer.



1. How many pennies can you get for three nickels?
2. Write the number word that means “not any.”
3. What number is 2 more than 17?
4. A quarter is worth   ?  ¢.
5. Write three other members in the number family of this fact:  $7 + 2 = 9$ .
6. Write the number that is 3 tens and 7.
7. 46 means   ?   tens and   ?   ones.
8. Write the number that is 10 more than 72.
9. Write the number in which the digit in tens place is 5 and the digit in ones place is 3.
10. Jim has a dime. How much will he have left if he spends 4¢?

If you have time, try these—

11. Write the number that is 14 more than 60.
12. Write the number that is 12 less than 70.



J U S T F O R F U N

*What number is:*

- *as much more than 5 as it is less than 9?*
- *as much more than 6 as it is less than 12?*
- *as much more than 2 as it is less than 8?*
- *as much more than 7 as it is less than 15?*





## Adding three numbers

1. Use the number line to do this addition. Start at zero. Go 3 steps to the right. Go 5 more steps.

Now go 1 more step. You stop at   ?  .

The sum is   ?  .

$$\begin{array}{r} 3 \\ 5 \\ + 1 \\ \hline \end{array}$$

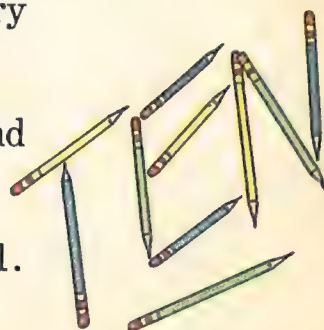
— Copy and find the sums. You may use the number line.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>
2.	4	2	2	2	5	1	3	1	2	3	5	7
	1	5	7	4	3	4	1	3	1	4	2	1
	<u>3</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>6</u>	<u>2</u>	<u>3</u>	<u>2</u>
3.	4	3	4	3	1	2	2	4	4	1	2	3
	2	2	2	4	2	5	3	2	1	2	5	2
	<u>3</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>6</u>	<u>1</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>7</u>	<u>3</u>	<u>4</u>

4. How many sheets of colored paper are needed at Don's table? Don needs 4. Ralph needs 2. Mary needs 3.

5. Dick bought 3 yellow pencils, 3 green pencils, and 4 blue pencils. How many pencils did he buy?

6. Find this sum on the number line:  $2 + 3 + 3 + 1$ .





## Checking addition

1. Find the cost of a ball, a boat, and a whistle. Do this addition:  $\longrightarrow$

Think:  $3¢ + 4¢ = 7¢$ ;  $7¢ + 2¢ = \underline{\quad ? \quad}$

A ball, a boat, and a whistle cost  $\underline{\quad ? \quad}$ .

Ball	3¢
Boat	4¢
Whistle	2¢
	<u>9¢</u>

To see if 9¢ is the right answer, *check* your work.

Add again. Begin at the bottom. Add up.

Think:  $2¢ + 4¢ = 6¢$ ;  $6¢ + 3¢ = \underline{\quad ? \quad}$

Did you get 9¢ for the answer again?

You have *checked* your addition.

2. Copy, add, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
2	6	4	5	4	1	2	1	2	3
4	1	3	1	4	3	2	7	5	1
<u>3</u>	<u>2</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>5</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>4</u>

— Use the picture above to find the cost of these toys.

- |                                      |                           |
|--------------------------------------|---------------------------|
| 3. A plane, a marble, and a whistle. | 6. A whistle and 2 boats. |
| 4. A boat, a plane, and a marble.    | 7. A plane and 2 marbles. |
| 5. A ball, a whistle, and a plane.   | 8. A boat and 2 whistles. |

### Practice for excellence.

For more practice, turn to page 314 and do Practice Set 1.





# Adding zeros

1. Each child had two turns at playing Spin the Arrow. The arrow stopped at 4 on Bob's first spin. It stopped at 0 on his second spin. His score was  $4 + 0$ , or   ?  .

2. What scores did these children make? Who won?

Dick	Don	Paul	Jeff	Jo	Sue	Ann	Ted
<u>3</u>	<u>4</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>5</u>	<u>2</u>
<u>0</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>5</u>	<u>3</u>	<u>0</u>	<u>7</u>

3.  $6 + 0 = \underline{\quad ? \quad}$     4.  $8 + 0 = \underline{\quad ? \quad}$     5.  $9 + 0 = \underline{\quad ? \quad}$     6.  $7 + 0 = \underline{\quad ? \quad}$   
 $0 + 6 = \underline{\quad ? \quad}$      $0 + 8 = \underline{\quad ? \quad}$      $0 + 9 = \underline{\quad ? \quad}$      $0 + 7 = \underline{\quad ? \quad}$

7. Make a rule for finding the sum of zero and any number.

8. When Jack did this addition, he thought: 7 and 0 are 7; 7 and 3 are   ?  .

Susan thought: 7 and 3 are   ?  . She skipped the zero. Why?

$$\begin{array}{r} 7 \\ 0 \\ + 3 \\ \hline 10 \end{array}$$

9. Copy, add, and check.

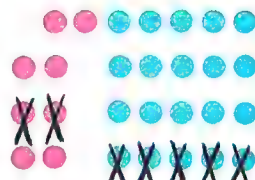
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
<u>3</u>	<u>7</u>	<u>4</u>	<u>6</u>	<u>2</u>	<u>4</u>	<u>0</u>	<u>3</u>	<u>5</u>	<u>0</u>
<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>1</u>
<u>4</u>	<u>2</u>	<u>2</u>	<u>0</u>	<u>5</u>	<u>5</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>

*Practice for excellence.* Do Practice Set 2, page 314.

# Undoing addition by subtracting

1. Tom says, "I can *undo* an addition by subtracting."  
Can you show what he means, using  $5 + 4 = 9$ ?

2. Add 2 and 5. The sum is   ?  .  
Now take the sum apart. You have 2 and   ?  .  
Take the 2 from the 7. The   ?   is left.  
Take the 5 from the 7. The   ?   is left.



3. Add 3 and 6. The sum is   ?  .  
Take the 9 apart. You have 3 and   ?  .  
Subtract the 3 from the 9. The   ?   is left.  
Subtract the 6 from the 9. The   ?   is left.

$3 + 6 = 9$
$9 - 3 = 6$
$9 - 6 = 3$

4. Jane says, "When I know a sum and one of its two parts, I subtract to find the other part."  
Can you show what she means?

5. Find the missing numbers on Tom's chart.

A girl in a green dress is sitting at a table, looking at a chart. A boy in a yellow shirt and blue pants is standing next to the table, also looking at the chart. The chart is a table with three columns: ONE NUMBER, OTHER NUMBER, and SUM.

ONE NUMBER	OTHER NUMBER	SUM
7	?	9
3	?	10
?	5	8
4	?	7
?	5	9

Think twice!

— Tell the missing number in each example.

6.  $6 + 2 + \underline{\quad} = 10$        $5 + \underline{\quad} + 2 = 10$        $\underline{\quad} + 3 + 3 = 10$

7.  $234 + 597 = 831$ , so  $831 - 234 = \underline{\quad}$ , and  $831 - 597 = \underline{\quad}$ .



# When do you subtract?

Problem  
solving  
help

1. Tom had 10¢. He spent 4¢. He has ?¢ left.

► Think of the 10¢ in two parts.

► One part he spent. *You know* this is 4¢.

► One part he had left. *You want to find* this part.

►  $10¢ - 4¢$  (spent) = ? (left)

► Check: Put the parts back together.  $4¢ + 6¢ = \underline{\quad}$

2. Linda had 8¢. She lost some. Now she has 3¢. How much did she lose?

► Think of the 8¢ in two parts.

► She still has one part. *You know* this is ?¢.

► She lost one part. *You want to find* this part.

►  $8¢ - 3¢$  (she has) = ? (she lost)

► Check: Put the parts back together.  $3¢ + 5¢ = \underline{\quad}$

3. Tom has 9 hens. 4 are black. The rest are white. He has ? white hens.

► Put the hens into two groups.

► Some are black. Do you know how many?

► The rest are white. Does the problem tell how many?

► How do you find the number of white hens?  $9 - 4 = \underline{\quad}$

► Check: Put the groups back together.  $4 + 5 = \underline{\quad}$

4. Jane wants a 10-cent ball. She has 7¢. She needs ?¢.

► Which part of the 10¢ does Jane have?

► Does the problem tell you which part of the 10¢ she needs?

► How do you find how much she needs?  $10¢ - 7¢ = \underline{\quad}$

► Check: Put the parts back together.  $7¢ + 3¢ = \underline{\quad}$

## Using subtraction

— In problems 1 through 8, tell:

- what number you think of as having two parts.
- how many are in the part you know.
- how to find the part you don't know.

1. Bill gave away 3 of his 5 kittens. Now he has   ? kittens left.

2. Nine children are playing. 6 of the children are boys.   ? are girls.

3. Joyce is 8 years old today. She has 3 candles for her birthday cake. She needs   ? more candles.

4. Tom had 10 rabbits. Some ran away. He has only 8 left.   ? ran away.

5. Sally ate 2 of her 8 apples. She had   ? left.

6. Nancy is sending 7 picture post cards. She has 3 stamps. She needs   ? more stamps.

7. Joe saw 9 boats. 4 were motorboats. The others were sailboats. How many were sailboats?

8. Jenny can find only 6 of her 9 pencils. She must hunt for the other   ? pencils.

9. Sam says, "When I know how many there are in all, and how many are in one part, I subtract to find the part I do not know."

Make up a problem to show what Sam means.

10. Write the fact you use to find each answer in Exercises 1 through 8.





## Numbers that make ten

1. Each of these children has 10 balloons. How many red balloons has each? How can you tell?

<u>Ted</u>	<u>Joe</u>	<u>Pete</u>	<u>Sue</u>	<u>Ann</u>
3 green ? red	4 blue ? red	? red 6 yellow	7 green ? red	? red 1 blue
<u>Jane</u>	<u>Bill</u>	<u>Fred</u>	<u>Molly</u>	<u>Sally</u>
1 blue 1 green ? red	3 green 2 blue ? red	5 blue 3 green ? red	4 green ? red 5 blue	5 green 5 blue ? red

2. Nancy has 10 balloons. She has just as many red ones as blue ones. How many of each has she?

3. John has a dime. If he buys three 1-cent balloons, how much will he have left?

Think twice!

4. For a dime, how many 5-cent balloons can you get? How many 2-cent balloons?

5. John has red, green, and blue balloons. He has 3 of each. Has he 10 balloons?

6. Harry's balloons are red, green, blue, yellow, white. He has 2 of each color. How many balloons has he?



# Facts about 11

- Ned needs light bulbs for a string of lights like this.  
How many light bulbs does he need?  
How many red bulbs should he buy if he buys 1 blue?  
2 blue? 3? 4? 5?

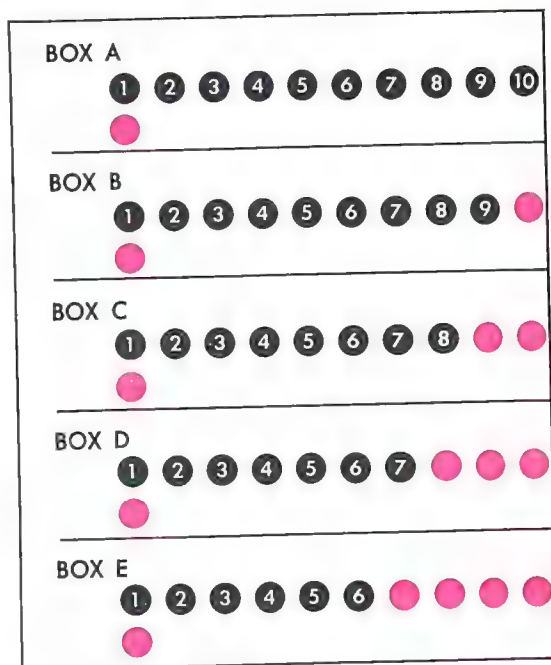
- Box A shows the fact  
 $10 + 1 = 11$ . Explain.

- Tell how Box B shows these four facts:

$$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array} \quad \begin{array}{r} 2 \\ + 9 \\ \hline 11 \end{array} \quad \begin{array}{r} 11 \\ - 9 \\ \hline 2 \end{array} \quad \begin{array}{r} 11 \\ - 2 \\ \hline 9 \end{array}$$

- What addition facts does Box C show? Box D? Box E?

- What subtraction facts do the boxes show?



- Write the number facts you learned in Exercises 3, 4, and 5.

- $7 + 3 = 10$ , so  $7 + 4 = ?$ .  $7 + 4 = 11$ , so  $11 - 7 = ?$ .
- $8 + 2 = 10$ , so  $8 + 3 = ?$ .  $8 + 3 = 11$ , so  $11 - 8 = ?$ .
- $5 + 5 = 10$ , so  $5 + 6 = ?$ .  $6 + 5 = 11$ , so  $11 - 6 = ?$ .
- $9 + 1 = 10$ , so  $9 + 2 = ?$ .  $9 + 2 = 11$ , so  $11 - 9 = ?$ .

Think twice!

Write an addition problem in which the answer is 11¢.

# Coins teach facts about 11



1. Use two nickels and a penny to show these four facts.

$$5 + 6 = 11 \quad 6 + 5 = 11 \quad 11 - 6 = 5 \quad 11 - 5 = 6$$

2. Jane says, "When I add 9¢ and 2¢, I change the 9 pennies and 2 pennies into 1 dime and 1 penny. That makes it easy to see that  $9¢ + 2¢ = 10¢ + 1¢ = \underline{\quad}¢$ ."

- Use coins to prove your answers in Exercises 3 to 5.

3.  $8¢ + 3¢ = 1 \text{ dime and } \underline{\quad} \text{ penny.} \longrightarrow 8¢ + 3¢ = \underline{\quad} ¢$

4.  $7¢ + 4¢ = \underline{\quad} \text{ dime and } \underline{\quad} \text{ penny.} \longrightarrow 7¢ + 4¢ = \underline{\quad} ¢$

5.  $6¢ + 5¢ = \underline{\quad} \text{ dime and } \underline{\quad} \text{ penny.} \longrightarrow 6¢ + 5¢ = \underline{\quad} ¢$

- Use coins to show that:

6.  $11¢ - 2¢ = 10¢ - 1¢ = \underline{\quad} ¢$        $11¢ - 3¢ = 10¢ - 2¢ = \underline{\quad} ¢$

7.  $11¢ - 4¢ = 10¢ - 3¢ = \underline{\quad} ¢$        $11¢ - 5¢ = 10¢ - 4¢ = \underline{\quad} ¢$

- Use 11 pennies to show that:

8. 2 fives and 1 more are 11.

3 threes and 2 more are 11.

9. 2 fours and 3 more are 11.

5 twos and 1 more are 11.

10. Cover the answers below. Practice until you can say each answer without looking.

9	2	8	3	7	4	6	5
+2	+9	+3	+8	+4	+7	+5	+6
11	11	11	11	11	11	11	11
11	11	11	11	11	11	11	11
-9	-2	-3	-8	-7	-4	-6	-5
2	9	8	3	4	7	5	6



# Using facts about 11



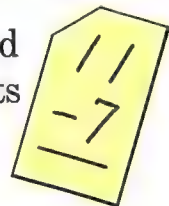
— Write each number fact you use in Exercises 1 through 8.

1. Jack has 11 goldfish. 9 are small. The other ? goldfish are large.
2. Linda has 7 red pencils and 4 green pencils. In all, she has ? pencils.
3. Jack is 8 years old. Molly is 11 years old. So Jack is ? years younger than Molly.
4. Eddie had 11¢. He spent a nickel. He has ?¢ left.
5. Ted has 3 red marbles and 8 blue ones. He has ? marbles in all.
6. How much money does Joe need to buy one of these tops and a string?
7. Ann had 6¢. Then she earned a nickel. Has she enough now to buy a 10-cent game? more than enough?
8. Tom and Bill found 11 marbles. If Tom keeps 2 marbles, Bill gets ?. If Tom keeps 3, Bill gets ?.
9. Show 5 ways in which 2 boys can share 11 marbles. Can they share them equally?

— Practice until you can say all the answers correctly.

- |     |           |           |           |           |           |           |           |           |           |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 10. | 9         | 5         | 6         | 11        | 8         | 11        | 11        | 7         | 11        |
|     | <u>+2</u> | <u>+6</u> | <u>+4</u> | <u>-4</u> | <u>+3</u> | <u>-9</u> | <u>-3</u> | <u>+4</u> | <u>-5</u> |
| 11. | 11        | 3         | 11        | 4         | 11        | 2         | 7         | 11        | 6         |
|     | <u>-2</u> | <u>+8</u> | <u>-6</u> | <u>+7</u> | <u>-8</u> | <u>+9</u> | <u>+3</u> | <u>-7</u> | <u>+5</u> |

12. Write the answers to Exercises 10 and 11 on folded paper. Make and study Help-Yourself Cards for any facts you did not know. Then write the answers again.



## Be your own teacher OPTIONAL

You can be your own teacher in arithmetic. You have not been taught to do the problems on this page, but you can do them. You may use coins or the Ten-Tens Chart on page 14, if you wish. Write only the answers.

1. Joe has 50¢. How much will he have left:

- if he spends 30¢?
- if he spends 31¢?
- if he spends 35¢?

2. Bill had 30¢.  
He found a quarter.  
Then he had   ?  ¢.

3. George has 1 quarter,  
2 dimes, and 1 nickel.  
In all, he has   ?  ¢.

4. Jim had 60¢.  
He spent a quarter.  
He has   ?  ¢ left.

5. Find the cost of:

- two 15-cent balls.
- two 32-cent puzzles.
- three 7-cent pencils.
- two 5-cent candy bars.

6. Don has 1 nickel, 7 pennies, and a quarter. He has   ?  ¢.

7. Jane wants a 49-cent brush and a 20-cent comb. Will both cost about 70¢, or 60¢?  
(Hint: 49¢ is about 50¢.)

8. Ann bought a 28-cent game. She gave the clerk 50¢. Is her change about 30¢, or 20¢?

9. Paula had a dollar. She spent 29¢. Does she have about 70¢, or 80¢ left?

10. There are 29 children in a class. To give 2 pencils to each child, do you need about 50 pencils, or 60 pencils?

11. Ted paid 79¢ for a pair of baby ducks. Did he pay about, 50¢ apiece, or 40¢ apiece?

12. Linda has 38¢. To buy a 10-cent pencil and a 50-cent notebook, does she need about 30¢ more, or about 20¢ more?

# Facts about 12

1. John and Pete want to make 12 lanterns. How many must Pete make if John makes 2? 3? 4? 5? 6?

2. Box A shows that:  
 $10 + \underline{\quad} = 12$ .

3. What addition facts does Box B show? Box C? D?

What subtraction facts do these boxes show?

4. What number facts does Box E show?

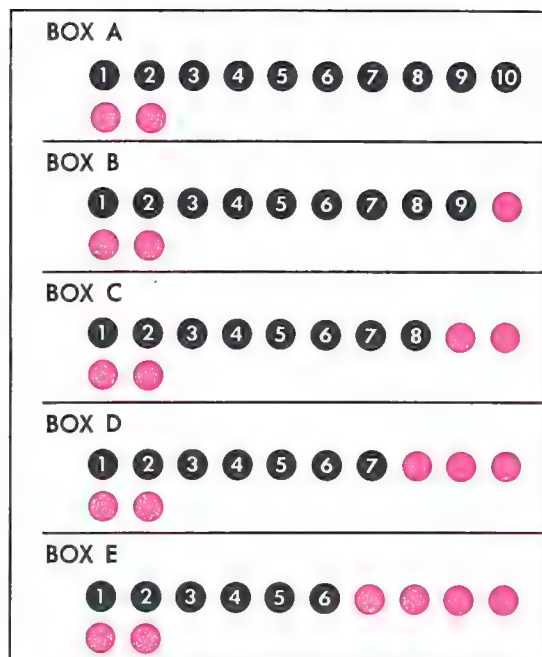
5. Write the number facts you learned in Exercises 3 and 4.

6. Use 2 nickels and 2 pennies to show these 4 facts.

$$5 + 7 = 12 \quad 7 + 5 = 12 \quad 12 - 5 = 7 \quad 12 - 7 = 5$$

— Tell the missing numbers.

- |   |  |
|---|--|
| <i>a</i>  | <i>b</i>   |
| 7. $9 + 1 = 10$ , so $9 + 3 = \underline{\quad}$ .  | $9 + 3 = 12$ , so $12 - 3 = \underline{\quad}$ . |
| 8. $8 + 2 = 10$ , so $8 + 4 = \underline{\quad}$ .  | $8 + 4 = 12$ , so $12 - 8 = \underline{\quad}$ . |
| 9. $7 + 3 = 10$ , so $7 + 5 = \underline{\quad}$ .  | $7 + 5 = 12$ , so $12 - 5 = \underline{\quad}$ . |
| 10. $6 + 4 = 10$ , so $6 + 6 = \underline{\quad}$ . | $6 + 6 = 12$ , so $12 - 6 = \underline{\quad}$ . |



Draw dot pictures to show that:

2 sixes are 12    3 fours are 12    2 fives and 2 more are 12



1. Count these apples by 4's. They show that:

$$4 + 4 = \underline{\quad} \quad 8 + 4 = \underline{\quad}$$

2. Cover a row of 4 apples.  $12 - 4 = \underline{\quad}$

3. Count backward by 4's from 12. This shows:

$$12 - 4 = \underline{\quad} \quad 8 - 4 = \underline{\quad}$$

4. Count the apples by 3's. This shows:

$$3 + 3 = \underline{\quad} \quad 6 + 3 = \underline{\quad} \quad 9 + 3 = \underline{\quad}$$

5. Cover a row of 3 apples.  $12 - 3 = \underline{\quad}$

6. Count backward by 3's from 12. This shows:

$$12 - 3 = \underline{\quad} \quad 9 - 3 = \underline{\quad} \quad 6 - 3 = \underline{\quad}$$

7. Count these cakes by 6's.  $6 + 6 = \underline{\quad}$

8. Cover 6 cakes.  $12 - 6 = \underline{\quad}$

**12 things = 1 dozen**

9. How many are left from a dozen when you take away 2? 3? 4? 5? 6?

10. Your foot ruler is  $\underline{\quad}$  inches long. How many inches can you see if you cover the last 3 inches? 4 inches?

11.  $9¢ + 3¢ = 1 \text{ dime and } \underline{\quad} \text{ cents. } 9¢ + 3¢ = \underline{\quad}¢.$

12. Cover the answers below. Practice until you can say each answer without looking.

9	3	8	4	7	5	6
$\begin{array}{r} +3 \\ 12 \end{array}$	$\begin{array}{r} +9 \\ 12 \end{array}$	$\begin{array}{r} +4 \\ 12 \end{array}$	$\begin{array}{r} +8 \\ 12 \end{array}$	$\begin{array}{r} +5 \\ 12 \end{array}$	$\begin{array}{r} +7 \\ 12 \end{array}$	$\begin{array}{r} +6 \\ 12 \end{array}$
12	12	12	12	12	12	12
$\begin{array}{r} -9 \\ 3 \end{array}$	$\begin{array}{r} -3 \\ 9 \end{array}$	$\begin{array}{r} -8 \\ 4 \end{array}$	$\begin{array}{r} -4 \\ 8 \end{array}$	$\begin{array}{r} -7 \\ 5 \end{array}$	$\begin{array}{r} -5 \\ 7 \end{array}$	$\begin{array}{r} -6 \\ 6 \end{array}$



# Using facts about 12



— Write the fact you use to find each answer.

1. The egg box is full. Diana is using 4 eggs in a cake. She will have ? eggs left.

2. Tom has 6 red pencils and 6 green pencils. All together he has ? pencils.

3. Nick wants to buy a 12-cent ticket. He has only 7¢. He needs ?¢ more.

4. Peter had 7¢. He was given a nickel. How much did he have then?

5. Jo has 12 pennies. 9 of them are shiny new ones. The other ? pennies are old.

6. Anne wants a dozen cakes. How many red cakes can she have if she gets 9 white ones? 8? 7? 6? 5?

7. Write four facts for each of these groups of numbers.

7,4,11

5,6,11

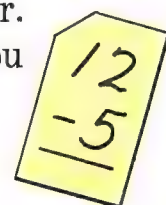
7,5,12

8,3,11

Practice until you can say every answer correctly.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
8.	12 -8 —	9 +3 —	12 -6 —	8 +4 —	4 +7 —	12 -3 —	7 +5 —	12 -9 —
9.	6 +6 —	4 +8 —	12 -7 —	8 +3 —	12 -5 —	3 +9 —	12 -4 —	5 +7 —

10. Write the answers to Exercises 8 and 9 on folded paper. Make and study Help-Yourself Cards for any facts you did not know. Then write the answers again.



# More number families

## A Family Tree



1. Read the facts on this family tree.

— Tell four facts in the family of each of these.

2.  $4 + 5 = \underline{\quad ? \quad}$        $8 + 4 = \underline{\quad ? \quad}$

3.  $12 - 5 = \underline{\quad ? \quad}$        $11 - 6 = \underline{\quad ? \quad}$

4.  $6 + 4 = \underline{\quad ? \quad}$        $11 - 7 = \underline{\quad ? \quad}$        $6 + 3 = \underline{\quad ? \quad}$        $9 - 5 = \underline{\quad ? \quad}$

5.  $8 + 3 = \underline{\quad ? \quad}$        $8 - 3 = \underline{\quad ? \quad}$        $3 + 4 = \underline{\quad ? \quad}$        $10 - 2 = \underline{\quad ? \quad}$

— Copy and write the missing numbers.

*a*

6.  $6 + 3 = \underline{\quad ? \quad}$   
 $3 + 6 = \underline{\quad ? \quad}$   
 $9 - 6 = \underline{\quad ? \quad}$   
 $9 - 3 = \underline{\quad ? \quad}$

*b*

$7 + 2 = \underline{\quad ? \quad}$   
 $2 + 7 = \underline{\quad ? \quad}$   
 $9 - 7 = \underline{\quad ? \quad}$   
 $9 - 2 = \underline{\quad ? \quad}$

*c*

$5 + 3 = \underline{\quad ? \quad}$   
 $3 + 5 = \underline{\quad ? \quad}$   
 $8 - 5 = \underline{\quad ? \quad}$   
 $8 - 3 = \underline{\quad ? \quad}$

*d*

$4 + 3 = \underline{\quad ? \quad}$   
 $3 + 4 = \underline{\quad ? \quad}$   
 $7 - 4 = \underline{\quad ? \quad}$   
 $7 - 3 = \underline{\quad ? \quad}$

7.  $7 + 3 = \underline{\quad ? \quad}$        $9 + 2 = \underline{\quad ? \quad}$        $7 + 5 = \underline{\quad ? \quad}$        $6 + 4 = \underline{\quad ? \quad}$   
 $3 + 7 = \underline{\quad ? \quad}$        $2 + 9 = \underline{\quad ? \quad}$        $5 + 7 = \underline{\quad ? \quad}$        $4 + 6 = \underline{\quad ? \quad}$   
 $10 - 7 = \underline{\quad ? \quad}$        $11 - 2 = \underline{\quad ? \quad}$        $12 - 5 = \underline{\quad ? \quad}$        $10 - 6 = \underline{\quad ? \quad}$   
 $10 - 3 = \underline{\quad ? \quad}$        $11 - 9 = \underline{\quad ? \quad}$        $12 - 7 = \underline{\quad ? \quad}$        $10 - 4 = \underline{\quad ? \quad}$

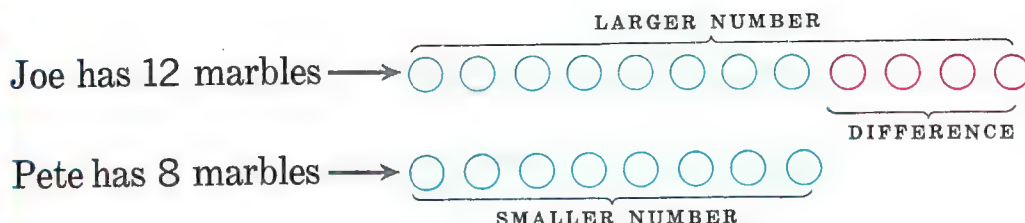
8.  $6 + 5 = \underline{\quad ? \quad}$        $9 + 3 = \underline{\quad ? \quad}$        $7 + 4 = \underline{\quad ? \quad}$        $8 + 3 = \underline{\quad ? \quad}$   
 $5 + 6 = \underline{\quad ? \quad}$        $3 + 9 = \underline{\quad ? \quad}$        $4 + 7 = \underline{\quad ? \quad}$        $3 + 8 = \underline{\quad ? \quad}$   
 $11 - 5 = \underline{\quad ? \quad}$        $12 - 3 = \underline{\quad ? \quad}$        $11 - 4 = \underline{\quad ? \quad}$        $11 - 3 = \underline{\quad ? \quad}$   
 $11 - 6 = \underline{\quad ? \quad}$        $12 - 9 = \underline{\quad ? \quad}$        $11 - 7 = \underline{\quad ? \quad}$        $11 - 8 = \underline{\quad ? \quad}$

9.  $8 + 4 = \underline{\quad ? \quad}$        $5 + 4 = \underline{\quad ? \quad}$        $8 + 2 = \underline{\quad ? \quad}$        $6 + 2 = \underline{\quad ? \quad}$   
 $4 + 8 = \underline{\quad ? \quad}$        $4 + 5 = \underline{\quad ? \quad}$        $2 + 8 = \underline{\quad ? \quad}$        $2 + 6 = \underline{\quad ? \quad}$   
 $12 - 4 = \underline{\quad ? \quad}$        $9 - 5 = \underline{\quad ? \quad}$        $10 - 2 = \underline{\quad ? \quad}$        $8 - 2 = \underline{\quad ? \quad}$   
 $12 - 8 = \underline{\quad ? \quad}$        $9 - 4 = \underline{\quad ? \quad}$        $10 - 8 = \underline{\quad ? \quad}$        $8 - 6 = \underline{\quad ? \quad}$



# Subtract to find the difference

Problem  
solving  
help



► *Compare* the number of marbles Joe has with the number Pete has. Joe has ? more marbles than Pete.

► *Compare* the number of marbles Pete has with the number Joe has. Pete has ? fewer marbles than Joe.

► The *difference* between the number of marbles Joe has and the number Pete has is ?.

1. What do you need to know and do to find:

- How many more fish Ted has than Bill?
- How many years older Jan is than Ned?
- How many years younger Nan is than Bobby?
- How many fewer nuts Kathy found than John?
- How much less a balloon costs than a horn?

2. Which are true? Use numbers to prove you are right.

- Larger number – smaller number = difference.
- Smaller number + difference = larger number.
- Difference = larger number – smaller number.
- Smaller number – larger number = difference.
- Larger number = difference + smaller number.
- To compare two numbers, you subtract the smaller number from the larger number.

What's the difference?

$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$
---

# Finding differences



1. Cover 3 of the 7 circles. This shows that:

- 7 is   ?   more than 3.  $7 - 3 = \underline{\quad ? \quad}$
- 3 is   ?   less than 7.  $7 - 3 = \underline{\quad ? \quad}$
- The difference between 7 and 3 is   ?  .  $7 - 3 = \underline{\quad ? \quad}$ .



Problem  
solving  
help

2. Find the answer to each of the following problems by covering 5 of these circles.



- A notebook costs 8¢. A pencil costs 5¢. The notebook costs   ?   ¢ more than the pencil.
  - Ann has 8¢. Joe has 5¢. Joe has   ?   ¢ less than Ann.
3. Write the subtraction fact you used in Exercise 2.
4. Compare the cost of a 10-cent comic book and a 6-cent blue pencil.
- Which costs more? How much more?
  - Which costs less? How much less?
  - The difference in cost is   ?   ¢.

— Write the fact you use to find each answer.

5. How much larger is 11 than 9? than 4?

6. Six is how much less than 11? than 9?

7. What is the difference between 12 and 9?

8. How much more is 12 than 3? than 5?

9. Nine is how much smaller than 12?

To find the  
difference,  
I subtract.



# Keeping up in arithmetic

## Oral

1. Which words go together?

sum          subtraction          difference          addition

2. Count by 4's to 20; by 3's to 12; by 5's to 30.

3. Count or add to find the cost of:

- three 3-cent post cards.
- four 5-cent pencils.
- four 4-cent stamps.
- Three 5-cent toys.
- six 2-cent marbles.
- two 6-cent candies.

4. How many tens are in the number 36?

5. Which is larger: 7 tens and 3, or 3 tens and 7?

6. In 45, is the 4 worth more than the 5? Why?

## Written

1. John has 12 football trading cards. Dan has 8. Dan has   ? fewer than John.

2. Steve saves cards of the Eagles football team. He got 5 from John, 4 from Jim, and 3 from Dan by trading. In all he got   ? cards by trading.

3. Jim can find only 7 of his 11 cards. He must look for   ? more cards.

— Copy, add, and check.

$$\begin{array}{r} 4. \quad 4 \\ \quad 2 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5. \quad 6 \\ \quad 2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 6. \quad 2 \\ \quad 4 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 7. \quad 5 \\ \quad 4 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 8. \quad 3 \\ \quad 6 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 9. \quad 4 \\ \quad 3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 10. \quad 2 \\ \quad 2 \\ \hline 8 \end{array}$$



# Backyard circus

— Write the fact you use to find each answer.

1. Ann and Joe had a circus. They had 5 white dogs and 7 black dogs, or ? dogs in the circus.

2. Eight of the 12 dogs ran away. Then they had ? dogs.

3. They had 11 birds, but only 8 cages. They had to get ? more cages.

4. They had a mother cat, a father cat, and 5 kittens. That was ? cats in all.

5. Ann sold 4 circus tickets. Joe sold 8.

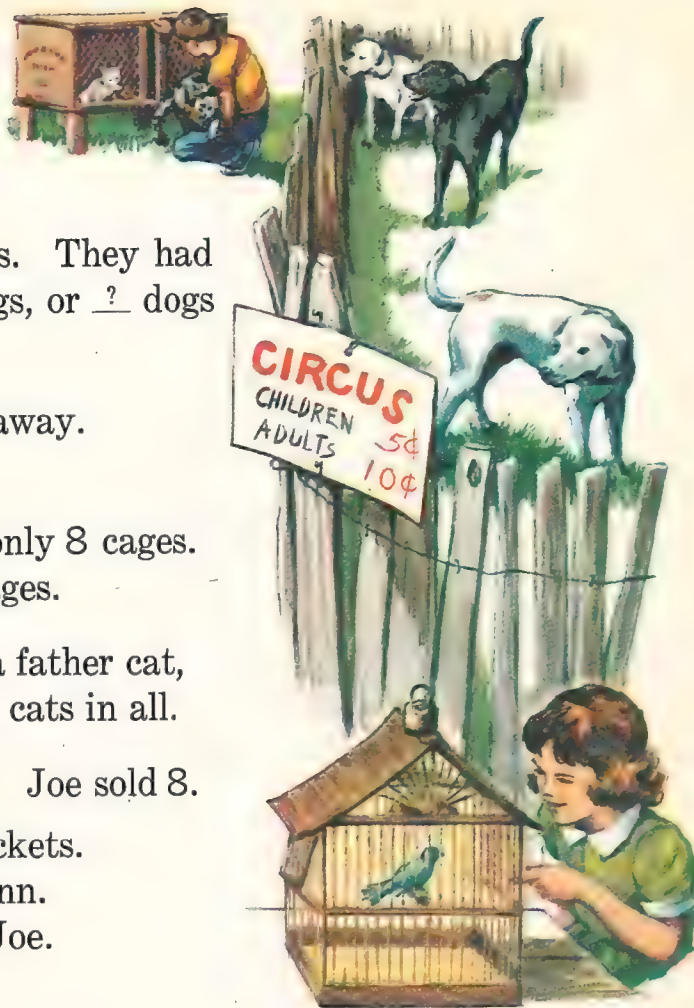
- Together they sold ? tickets.
- Joe sold ? more than Ann.
- Ann sold ? fewer than Joe.

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
6.	5	2	5	4	3	4	9	8	6	9
	<u>7</u>	<u>9</u>	<u>6</u>	<u>8</u>	<u>9</u>	<u>7</u>	<u>2</u>	<u>4</u>	<u>5</u>	<u>3</u>
7.	2)	1)	3)	2)	3)	2)	5)	1)	1)	2)
	2)	1)	1)	3)	2)	1)	3)	2)	3)	1)
	<u>4</u>	<u>9</u>	<u>8</u>	<u>6</u>	<u>7</u>	<u>7</u>	<u>4</u>	<u>8</u>	<u>7</u>	<u>9</u>

Think twice!

Joe sold his 8 tickets for 10¢ each. Ann sold her 4 tickets for 5¢ each. How much money did each get? both get?



# IT'S CHECK-UP TIME



1.  $6 + 6 = 12$ , so  $6 + 7 = \underline{\quad ? \quad}$ .

2. 
$$\begin{array}{r} 6 \\ + 0 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 2 \\ 3 \\ + 6 \\ \hline \end{array}$$

4. Which fact does not belong?

$9 + 2 = 11$

$2 + 9 = 11$

$11 - 9 = 2$

$9 - 2 = 7$

— Write the facts you use to find the answers in Exercises 5 through 9.

5. What is the missing number?  $5 + \underline{\quad ? \quad} = 11$ .

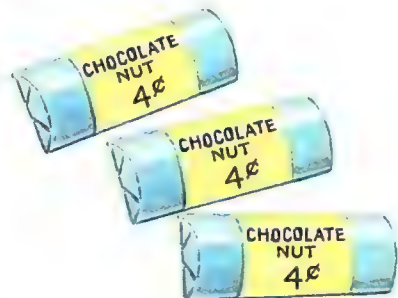
6. Joe has a dime. If he spends 3¢, he will have  $\underline{\quad ? \quad}$ ¢ left.

7. There were a dozen children at Ann's party. 5 were boys and  $\underline{\quad ? \quad}$  were girls.

8. Don had 12¢. He lost a coin. He has 7¢ left. What coin did he lose?

9. Tom is 8 years old. Nancy is 11 years old. Nancy is  $\underline{\quad ? \quad}$  years older than Tom.

10. Write an addition to find the cost of these three candy bars.



If you have time, try these —

11.  $100 - 50 = 50$ , so  $100 - 49 = \underline{\quad ? \quad}$ .

12.  $38 + 47 = 85$ , so  $85 - 38 = \underline{\quad ? \quad}$ .



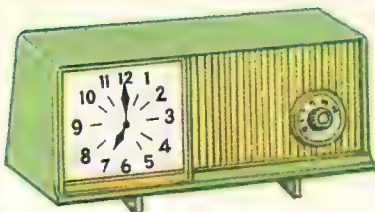
J U S T F O R F U N

John has 2 coins. Pete has 4; Bill has 5; Tom has 6; Joe has 8. Each boy has 26¢.

What coins does each boy have?

# Telling time

1. Bob's clock radio shows what time he gets up.  
What time does he get up?



2. At 7 o'clock:
- the long hand points to   ?  .
  - the short hand points to   ?  .

3. What time does each of these clocks say?

A



B



C



D



4. Tell which clock in Exercise 3 shows:

- the time Billy's school starts in the morning.
- the time Billy's school closes in the afternoon.
- the time Billy has lunch; the time he has supper.

5. What number does the short hand point to at 5 o'clock?  
6 o'clock? 11 o'clock? 4 o'clock? 2 o'clock?

6. What number does the long hand point to at each hour  
in Exercise 5?

7. The first clock below shows half past two. What time  
does each of the other clocks show?





# Reading the clock

1. Make a toy clock. Use it to show the following:

- 1 o'clock, 2 o'clock, 8 o'clock, 11 o'clock.
- half past 1, half past 2, half past 8, half past 11.
- 15 minutes past 1, 15 minutes past 2, 15 minutes past 11.
- 15 minutes of 1, 15 minutes of 2, 15 minutes of 11.
- the time every 5 minutes from 10 o'clock to 11 o'clock.

15 minutes past 12 is *quarter past 12*.

15 minutes of 12 is *quarter of 12*.

12 o'clock in the daytime is *noon*.

6 A.M. is 6 o'clock in the *morning*.

6 P.M. is 6 o'clock in the *evening*.

60 minutes (min.) = 1 hour (hr.)

2. Where does the long hand point:

- at any hour?
- at any half hour?
- at quarter past any hour?
- at quarter of any hour?

— Which clock below shows:

- 3. 3 o'clock?
- 6. 15 minutes after 4?
- 9. 20 minutes of 3?
- 4. half past 8?
- 7. quarter of 10?
- 10. 20 minutes of 6?
- 5. 15 minutes of 10?
- 8. quarter after 4?
- 11. 30 minutes past 8

A



B



C



D



E

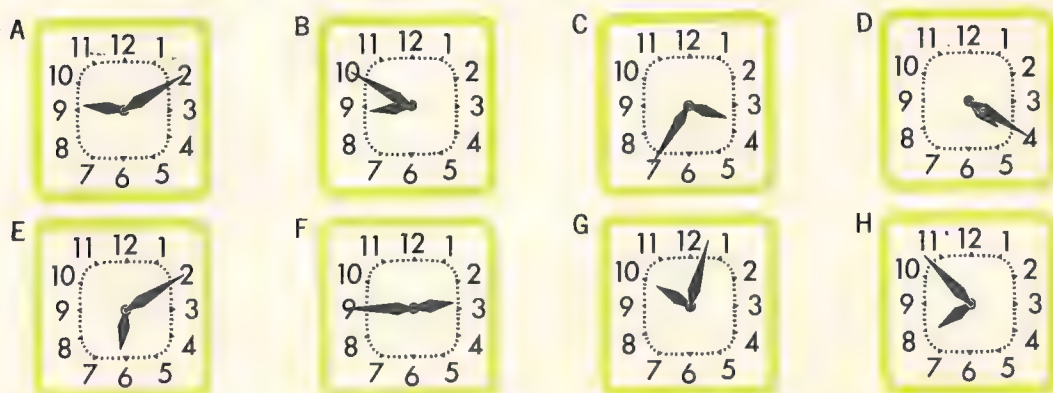


F



# Practice in telling time

Easy practice. What time does each clock show?



Harder practice. What time does each clock show?



## Practice for speed and accuracy

— Write the four facts in the family of each of these.

*a*

*b*

*c*

*d*

1.  $9 + 2 = \underline{\quad ? \quad}$

$5 + 7 = \underline{\quad ? \quad}$

$11 - 3 = \underline{\quad ? \quad}$

$3 + 9 = \underline{\quad ? \quad}$

2.  $11 - 7 = \underline{\quad ? \quad}$

$6 + 6 = \underline{\quad ? \quad}$

$5 + 6 = \underline{\quad ? \quad}$

$12 - 4 = \underline{\quad ? \quad}$

# Inches — feet — yards

1. Who is taller, Marie or Tim? —————>

2. Miss Baker asked, "How tall are you?"

Marie said, "I am tall enough to put a letter in the mailbox."

Tim said, "I am 46 *inches* tall."

Who gave the more exact answer? Why?

3. Joe is in Ohio. His cousin, Steve, is in Texas. How can they find out who is taller?

4. Do you know how tall you are? How do you find out?

5. Have you ever needed to measure anything? What was it? What did you use to measure with?

6. What do the numbers on a *foot ruler* mean? on a *yardstick*?



- Use your ruler to find how long these lines are.

A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

TRY  
IT

- Use your ruler to draw a line:  
3 inches long      6 inches long      8 inches long.
- Ask your teacher to draw 12 lines on the board.  
Guess how long each line is. Check by measuring.
- Draw a line you think is 1 foot long. How can you check?  
Draw another you think is 1 yard long. Check.



7. Which of these might be 2 inches long?  
Which might be 2 feet long? 2 yards long?

→ { A BED  
A CRAYON  
AN UMBRELLA

8. How many inches long is a foot ruler? a yardstick?

9. Measure a yardstick with a foot ruler. How many feet are in a yard?

12 inches (in.) = 1 foot (ft.)

3 feet (ft.) = 1 yard (yd.)

36 inches (in.) = 1 yard (yd.)

10. *In.* is a short way to write *inch* or *inches*.

Use a short way to write *foot* or *feet*.

Use a short way to write *yard* or *yards*.

11. 1 ft. = ? in.

1 yd. = ? in.

1 yd. = ? ft.

2 yd. = ? ft.

Think twice!

12. How long *to the nearest inch* are these lines? →

13. To the nearest inch, tell how long your Arithmetic book is; how wide; how thick.

14. To the nearest inch, tell how deep the wastebasket is.

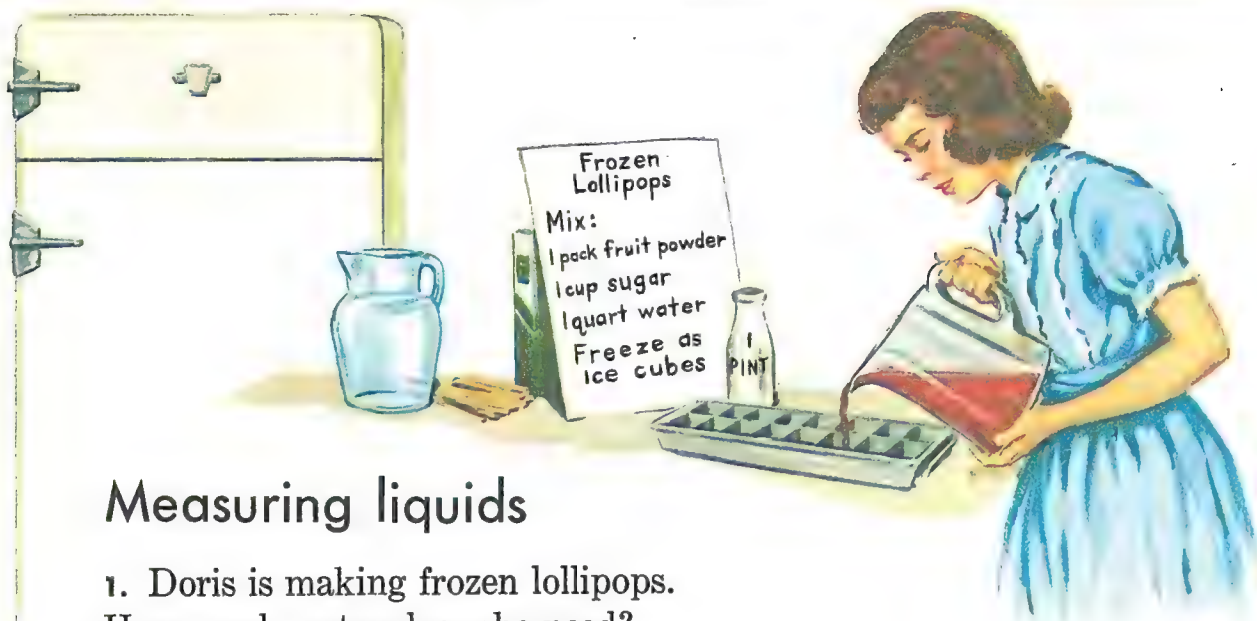
15. To the nearest inch, tell how tall you are.

Practice for speed and accuracy

— Copy, add, and check.

a	b	c	d	e	f	g	h	i	j
2)	4)	5)	6)	2)	2)	3)	2)	5)	4)
6)	3)	2)	3)	0)	7)	1)	1)	2)	3)
<u>2</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>7</u>	<u>2</u>	<u>3</u>	<u>9</u>	<u>4</u>	<u>2</u>





## Measuring liquids

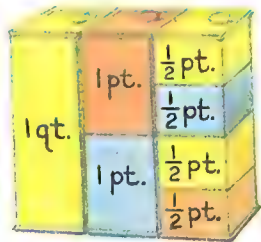
1. Doris is making frozen lollipops.  
How much water does she need?

She used a *pint* bottle to measure  
a *quart* of water.

How did she do that?

TRY  
IT

- Pour 1 pint of water into a quart bottle.
- Pour another pint of water into the quart bottle.  
Does this show that 2 pints = 1 quart?
- Show that 2 measuring cups = 1 pint.
- Show that a drinking glass = a cup = a half-pint carton.

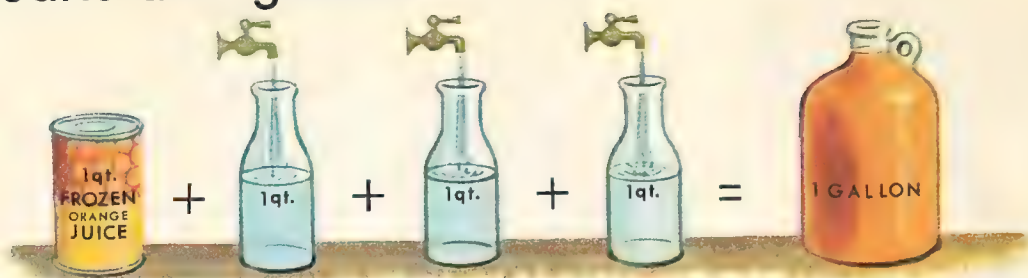
2. Tom built this with milk cartons:  →  
It shows that 1 quart =   ?   pints =   ?   half-pints.

3. Lee had a quart of milk. She filled 2 glasses.  
How much milk was left in the carton?

4. Write an addition to show how many cups you can fill  
with 2 quarts of milk.

5. A pint of ice cream serves 4 persons. Will a quart  
serve 8? How do you know?

# Quarts and gallons



When the Scott family goes to a picnic, they fill a jug with orangeade.

The jug holds 1 *gallon*.

1. Look at the picture. They put   ?   quart of juice and   ?   quarts of water in the jug.
2. How many quarts does the gallon jug hold?



2 cups (c.) = 1 pint (pt.)  
 2 pints (pt.) = 1 quart (qt.)  
 4 quarts (qt.) = 1 gallon (gal.)

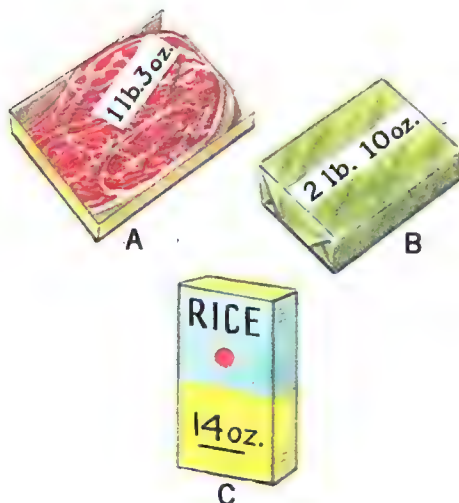
3. Write in a short way: 1 quart    5 gallons    4 quarts    1 pint
4. A class bought 2 quarts of vanilla ice cream. They bought 2 quarts of chocolate ice cream. Did they buy a gallon of ice cream?
5. 1 gal. =   ?   qt.      2 gal. =   ?   qt.      one half gal. =   ?   qt.

Think twice!

6. How many quart cartons of milk will you buy to fill 12 drinking glasses?
7. How many half-pint cartons can you fill with a gallon of milk? how many glasses?
8. How many quarts of water are needed to fill an aquarium that holds one and one-half gallons?







## Pounds and ounces

1. How does the scale show that the loaf of bread weighs one pound?
2. Where will the arrow on the scale point if Jane weighs 2 loaves? 3 loaves? 4 loaves? 5?
3. How many slices are in Jane's loaf of bread?
4. There is 1 slice of bread on the scale. It weighs one ounce. How much will 4 slices weigh? 6 slices? 8? 12? 16?
5. Where will the arrow point to show 4 ounces? 6 ounces? 8? 12? 16?

**16 ounces (oz.) = 1 pound (lb.)**

6. 4 oz. is the short way of writing 4   .  
4 lb. is the short way of writing 4   .
7. Guess the weight of:
  - your pencil
  - your arithmetic book
  - your eraser
  - your shoe
  - your ruler
  - your reader
  - your crayons
  - your notebook
8. Use a scale to check your guesses for Exercise 7.

**Think twice!**

Look at the packages at the left. Tell the weight of each *to the nearest pound*.

## Practice with measures

- Harry went to the store for 4 quarts of ice cream.

This is what he got:  $\longrightarrow$

Did he get 4 quarts?



- Anne started reading at a quarter after 3. She stopped at half past 3. How long did she read?
- What things might be sold by the pound? by the ounce?
- Name things sold by the gallon; by the half gallon.
- Steve needs a piece of rope 2 yd. long. He has a piece 7 ft. long. Is his piece too short? too long? just right?

*a*

*b*

*c*

- |                            |                         |                                 |
|----------------------------|-------------------------|---------------------------------|
| 6. 1 pt. = <u>  ?</u> cups | 2 pt. = <u>  ?</u> qt.  | one half pt. = <u>  ?</u> cup   |
| 7. 1 qt. = <u>  ?</u> pt.  | 2 qt. = <u>  ?</u> cups | one half gal. = <u>  ?</u> pt.  |
| 8. 1 qt. = <u>  ?</u> cups | 2 qt. = <u>  ?</u> pt.  | one half gal. = <u>  ?</u> qt.  |
| 9. 1 gal. = <u>  ?</u> pt. | 2 gal. = <u>  ?</u> pt. | one half gal. = <u>  ?</u> cups |

### Practice for speed and accuracy

— Find the missing number in each of these examples.

*a*

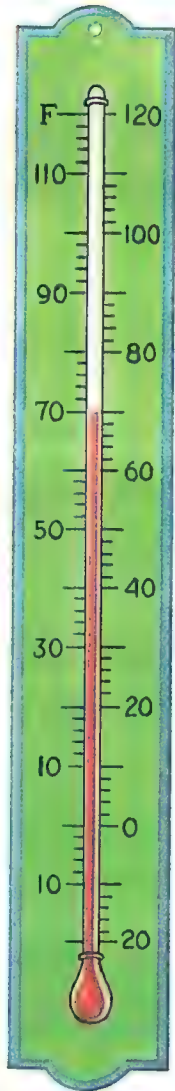
*b*

*c*

*d*

- |                                 |                              |                              |                              |
|---------------------------------|------------------------------|------------------------------|------------------------------|
| 1. $9 + \underline{\quad} = 11$ | $\underline{\quad} + 9 = 12$ | $8 + \underline{\quad} = 11$ | $4 + \underline{\quad} = 12$ |
| 2. $\underline{\quad} + 6 = 12$ | $3 + \underline{\quad} = 11$ | $\underline{\quad} + 7 = 12$ | $2 + \underline{\quad} = 11$ |
| 3. $8 + \underline{\quad} = 12$ | $\underline{\quad} + 5 = 12$ | $3 + \underline{\quad} = 12$ | $\underline{\quad} + 6 = 11$ |
| 4. $\underline{\quad} + 5 = 11$ | $\underline{\quad} + 7 = 11$ | $\underline{\quad} + 4 = 10$ | $6 + \underline{\quad} = 12$ |

## Measuring temperature



1. When Betty looked at the thermometer on her porch this morning, it looked like the one shown here. Do you think Betty wore a coat to school? Explain.

2. The top of the red liquid in a thermometer shows the *temperature* of the air. Read the number at the top of the red liquid.

The thermometer shows a temperature of 70 *degrees*.  
70 *degrees* is written 70°. Water freezes at 32°.

3. When the air gets warmer, the red liquid goes up.

Tell where the top of the red liquid is when the temperature is 10° warmer than 70°; 10° warmer than 80°; 10° warmer than 40°.

4. When the air gets colder, the red liquid goes down.

Tell where the top of the red liquid is when the temperature is 10° colder than 70°; 10° colder than 30°; 10° colder than 20°

5. How much colder is 20° than 50°?

6. How much warmer is 70° than 40°?

7. Where is the top of the liquid when the temperature is:  
0° 10° 20° 30° 40° 50° 60° 70° 80°

8. On the thermometer find: 30° 32° 34° 36° 38°

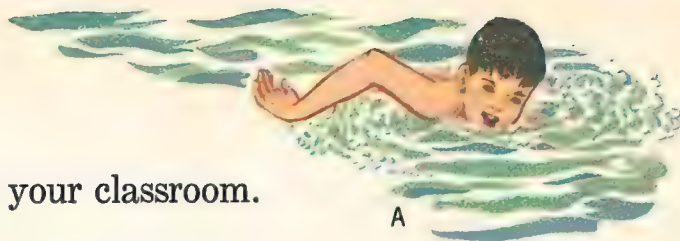
9. Peter says, "A thermometer is like a number line that goes up and down by 2's."

Show what Peter means.



# The thermometer

1. Read the thermometer in your classroom.  
What is the temperature?
2. Put the thermometer outside the window.  
What happens to the red liquid? What is the temperature outdoors?
3. Which picture, A, B, or C, shows what you might do when the temperature is  $25^{\circ}$ ?  $80^{\circ}$ ?  $68^{\circ}$ ?
4. Fred saw ice on the pond in the morning. The temperature was  $27^{\circ}$ . At noon the thermometer read  $38^{\circ}$ . The ice had melted. Why?
5. How much does the temperature rise when it goes from  $40^{\circ}$  to  $45^{\circ}$ ? from  $60^{\circ}$  to  $68^{\circ}$ ?
6. How much does the temperature fall when it goes from  $75^{\circ}$  to  $70^{\circ}$ ? from  $56^{\circ}$  to  $50^{\circ}$ ?
7. Is there a weather report in your newspaper?  
What was the lowest temperature yesterday?  
the highest?
8. Tell some other ways in which thermometers are used.



A



B



C

## Practice for speed and accuracy

— Copy and write the answers.

*a*

1.  $5 + 6 = \underline{\quad ? \quad}$

2.  $9 + 3 = \underline{\quad ? \quad}$

3.  $12 - 5 = \underline{\quad ? \quad}$

4.  $11 - 7 = \underline{\quad ? \quad}$

*b*

$7 + 5 = \underline{\quad ? \quad}$

$4 + 7 = \underline{\quad ? \quad}$

$11 - 6 = \underline{\quad ? \quad}$

$12 - 4 = \underline{\quad ? \quad}$

*c*

$3 + 8 = \underline{\quad ? \quad}$

$5 + 7 = \underline{\quad ? \quad}$

$12 - 3 = \underline{\quad ? \quad}$

$11 - 7 = \underline{\quad ? \quad}$

*d*

$8 + 4 = \underline{\quad ? \quad}$

$3 + 9 = \underline{\quad ? \quad}$

$11 - 8 = \underline{\quad ? \quad}$

$12 - 4 = \underline{\quad ? \quad}$

# The calendar

1. Miss Scott's pupils make a weather calendar each month. Below is part of their October calendar.

For each day from October 1 to 14 tell what kind of weather they had; what the temperature was.

2. On what day of the week was October 1? 2? 3? 5? 6? 10? 14?

— Use the chart for Exs. 3 and 4. —>

3. Tell how many months are in a year.

- Say the names of the months.
- Write the names of the months a long way; a short way.

4. Tell how many days are in a week.
















- Say the names of the days.
- Write the names of the days a long way; a short way.

## MONTHS

1. JANUARY	[Jan.]
2. FEBRUARY	[Feb.]
3. MARCH	[Mar.]
4. APRIL	[Apr.]
5. MAY	
6. JUNE	
7. JULY	
8. AUGUST	[Aug.]
9. SEPTEMBER	[Sept.]
10. OCTOBER	[Oct.]
11. NOVEMBER	[Nov.]
12. DECEMBER	[Dec.]

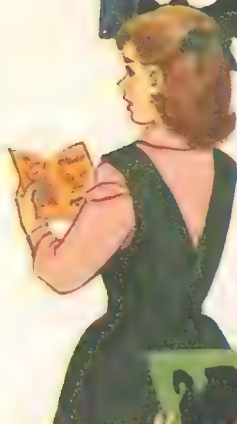
## DAYS

1. SUNDAY	[Sun.]
2. MONDAY	[Mon.]
3. TUESDAY	[Tues.]
4. WEDNESDAY	[Wed.]
5. THURSDAY	[Thurs.]
6. FRIDAY	[Fri.]
7. SATURDAY	[Sat.]

						
Sunny	Rainy	Snowy	October			
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1  65°	2  62°	3  60°	4  61°	5  59°	6  59°	7  50°
8  51°	9  45°	10  40°	11  39°	12  35°	13  32°	14  40°
	16	17		19	20	21



NOVEMBER						
S	M	T	W	T	F	S
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			



- Miss Cook's pupils are looking at a calendar for the month of   . What do the letters across the calendar stand for?
- The fourth Thursday in November is Thanksgiving Day. Find the fourth Thursday. It is November 24. Why is the 24 red?
- Find Diana's birthday. It is Sunday, November 6. How is it marked?
- Tom's birthday is marked with a red ring, too. Find it. His birthday is on what day of the month? what day of the week?
- Tom says his birthday is two weeks before Thanksgiving. Is he right?
- What days of the month are the Sundays? the Tuesdays? the Thursdays? the Saturdays?
- On what day of the week is November 5? 10? 20? 25? 30?
- How many days has November?
- Which children in your class have November birthdays?  
On your classroom calendar show on what days of the month their birthdays come. Show on what days of the week their birthdays come this year.



## Using measures

— You will need your classroom calendar to answer some of the questions below. Write your answers.

1. What year is it now? what month? what day of the month? what day of the week?


2. On what day of the week is the first of November?

3. Thanksgiving comes on what day of the week this year? what day of the month?

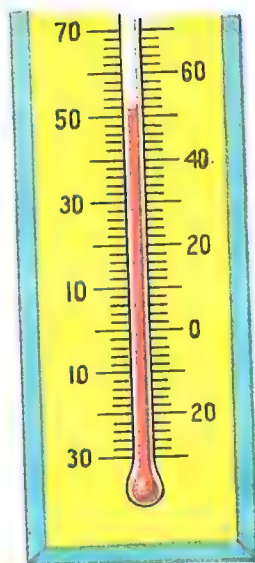
4. What day of the month is two weeks before Thanksgiving? What day of the week is it?

5. On what day of the month is the last day of November? What day of the week is it?

6. In the morning the thermometer read  $42^{\circ}$ .

At noon it looked like this: 

The temperature had risen  $\underline{\quad}^{\circ}$ .



7. Dan found that the door of the classroom is twice as tall as the yardstick. The door is  $\underline{\quad}$  ft. tall.

8. Sue bought a two-pound loaf of bread. She used half of it for sandwiches. She has  $\underline{\quad}$  pound left.

9. The thermometer read  $55^{\circ}$  at noon. It was  $10^{\circ}$  colder at night. What did the thermometer read then?

*a*

10. 1 week =  $\underline{\quad}$  days.

11. Next after Monday is  $\underline{\quad}$ .

12. Next after Friday is  $\underline{\quad}$ .

13. Next after Sunday is  $\underline{\quad}$ .

*b*

1 year =  $\underline{\quad}$  months.

Next after May is  $\underline{\quad}$ .

Next after July is  $\underline{\quad}$ .

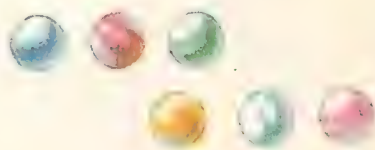
Next after January is  $\underline{\quad}$ .

# Halves — thirds — fourths

1. Peg cut a candy bar into two pieces the same size. She gave one piece to Rose and kept one piece. Each girl got *one half* ( $\frac{1}{2}$ ) of the candy bar. In a whole candy bar there are   ?   halves.



2. Here are 6 marbles divided into 2 equal groups. Each group is one half of the whole group of 6.  $\frac{1}{2}$  of 6 marbles is   ?   marbles.



3. This brick of ice cream has 3 equal parts. *One third* ( $\frac{1}{3}$ ) is chocolate. One third is vanilla. One third is strawberry.



In a whole there are   ?   thirds.

4. Here are 6 pencils divided into 3 equal groups.

Each group has   ?   pencils.

$\frac{1}{3}$  of 6 pencils is   ?   pencils.



5. There are 4 equal parts in this waffle.

Each of four boys ate one of the pieces.

Each boy ate *one fourth* ( $\frac{1}{4}$ ) of the waffle.

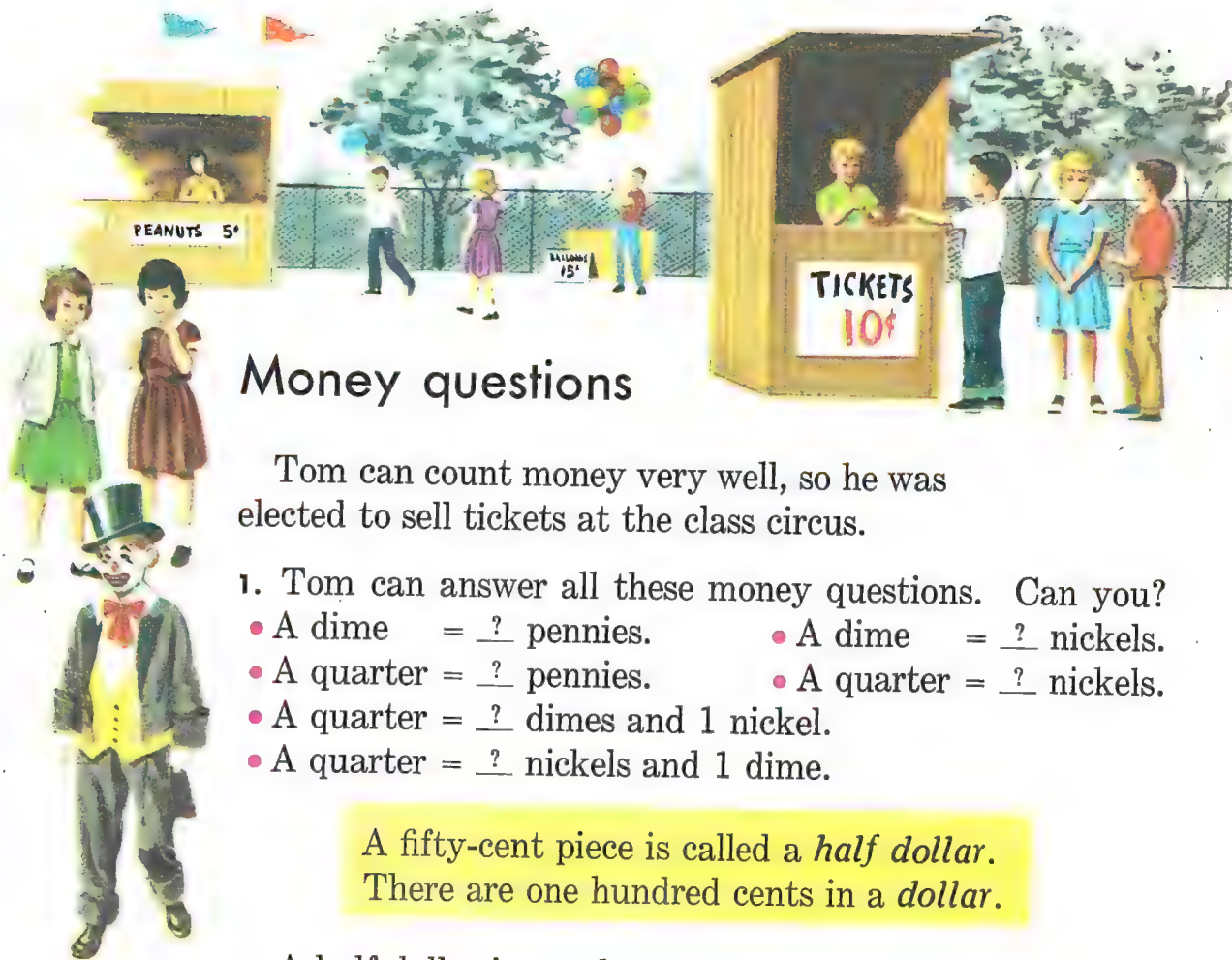


6. On a bulletin board are 8 flowers divided into 4 equal groups.

There are   ?   flowers in each group.

$\frac{1}{4}$  of 8 flowers is   ?   flowers.





## Money questions

Tom can count money very well, so he was elected to sell tickets at the class circus.

1. Tom can answer all these money questions. Can you?
  - A dime =   ?   pennies.
  - A dime =   ?   nickels.
  - A quarter =   ?   pennies.
  - A quarter =   ?   nickels.
  - A quarter =   ?   dimes and 1 nickel.
  - A quarter =   ?   nickels and 1 dime.

A fifty-cent piece is called a *half dollar*.  
There are one hundred cents in a *dollar*.

2. A half dollar is worth:  
  ?   pennies      ?   nickels      ?   dimes      ?   quarters.
3. A dollar is worth:  
  ?   pennies      ?   nickels      ?   dimes      ?   quarters.
4. A dollar is worth   ?   half dollars.
5. How much change will you get:
  - from a nickel if you spend 3¢? 2¢? 1¢? 4¢? 5¢?
  - from a dime if you spend 5¢? 3¢? 8¢? 6¢? 7¢? 9¢?
  - from a quarter if you spend 20¢? 15¢? 10¢? 5¢? 1¢?
  - from a half dollar if you spend 40¢? 30¢? 20¢? 10¢?
  - from a dollar if you spend 80¢? 70¢? 40¢? 30¢? 10¢?



## More money questions

1. Do you have an allowance? Do you earn money? What are some ways of earning money?
2. Do you save money each week? What do you plan to do with what you save?

3. Would you trade:

- a dollar for 3 quarters?
- a dollar for 8 dimes and 2 nickels?
- a dollar for a half dollar and 4 dimes?
- a dollar for a half dollar and 2 quarters?

4. What coins can you put with:

- a quarter to make 40¢? 46¢? 50¢? 60¢?
- a dime to make 50¢? 75¢? a dollar?
- a half dollar to make 75¢? 90¢? a dollar?

5. Which is less:

- a quarter, or 2 dimes and 2 nickels?
- a half dollar, or 1 quarter and 4 nickels?

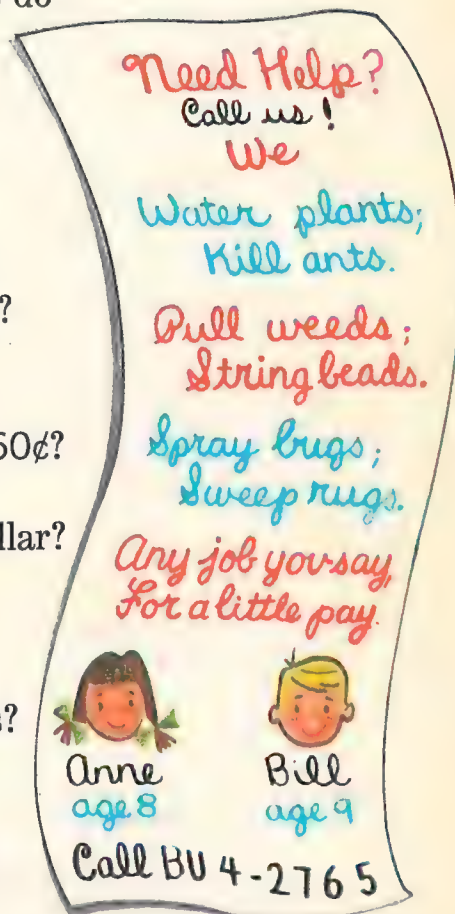
6. Which is more:

- a half dollar or 1 quarter and 4 dimes?
- a dollar or a half dollar and a quarter?

7. Pete saves 10¢ a week. How long does it take him to save 40¢?

8. Joe wants to buy a 50-cent flashlight. He has 30¢. He needs   ?   more.

9. Jane has a quarter. Ann has 4 nickels. Who has more? How much more?



# Roman numerals

Janet has a clock puzzle.  
She has just put it together.

The red figures on the puzzle are called *Roman numerals*.



1. The hands on the puzzle show   ?   o'clock.
2. Touch and read aloud each Roman numeral on the puzzle.
3. What does the Roman numeral I mean? II? III?
4. V = 5    I = 1    VI =   ?      VII =   ?      VIII =   ?
5. X = 10    XI =   ?      XII =   ?
6. V = 5    IV = 4    X = 10    IX =   ?
7. Write the Roman numerals from 1 to 12.
8. Read the numerals on the books below.

There are 12 books in the set. Book number 3 is missing. Which other books are missing?



9. Start an Arithmetic Folder. For your folder make a list of places where you see Roman numerals.

Try to find out why they are called Roman numerals.

# Keeping up in arithmetic

## Oral

— Tell as many sets of numbers as you can for each of these exercises.

1.  $\underline{\quad} + \underline{\quad} = 11$

2.  $\underline{\quad} + \underline{\quad} = 12$

3.  $\underline{\quad} + \underline{\quad} = 10$

4.  $\underline{\quad} + \underline{\quad} = 9$

5.  $\underline{\quad} + \underline{\quad} = 8$

6. Which is largest? smallest?

$$\frac{1}{2}$$

$$\frac{1}{3}$$

$$\frac{1}{4}$$

7. The sum of 2 numbers is 11. One of the numbers is 7. The other number is  $\underline{\quad}$ .

8. What is the difference between 7 and 3?

9. Name three coins you can use to make 27¢; 60¢; 36¢; 25¢.

10. Tell which is more:

1 lb. or 14 oz. | 1 hr. or 75 min.

3 ft. or 40 in. | 3 qt. or 2 gal.

11.  $73 = \underline{\quad}$  tens  $\underline{\quad}$  ones

$90 = \underline{\quad}$  tens  $\underline{\quad}$  ones

## Written

— Copy, add, and check.

1.  $\begin{array}{r} 3 \\ 0 \\ \hline 9 \end{array}$

2.  $\begin{array}{r} 2 \\ 3 \\ \hline 7 \end{array}$

3.  $\begin{array}{r} 6 \\ 2 \\ \hline 3 \end{array}$

4.  $\begin{array}{r} 5 \\ 4 \\ \hline 2 \end{array}$

5.  $\begin{array}{r} 2 \\ 4 \\ \hline 6 \end{array}$

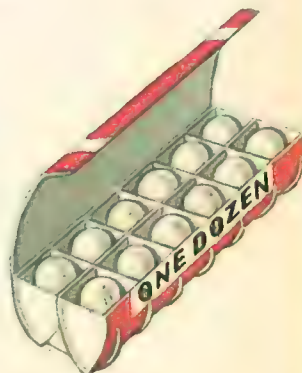
6.  $\begin{array}{r} 4 \\ 4 \\ \hline 4 \end{array}$

7. Write the numbers from 66 to 77.

8. A week and 5 days =  $\underline{\quad}$  days.

9. Sue's box of eggs was full. She used 7. How many were left?

10. Ted's answer to an addition was 75. The 7 should have been a 9. How much larger should his answer have been?





# PROBLEM TEST 1

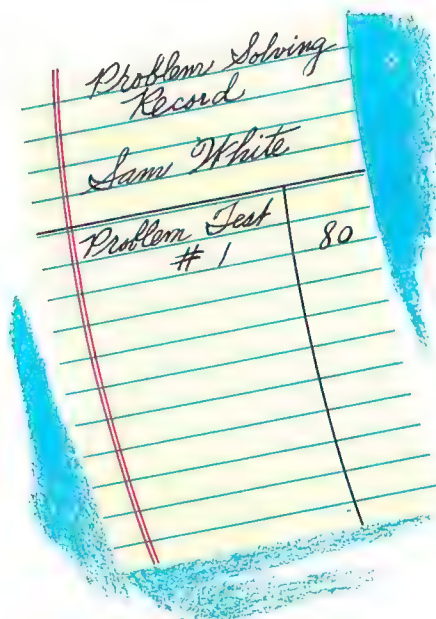


1. Bob had a dollar changed into ? dimes.
2. Ted has 6 rows of 10 stamps each, and 3 more stamps. In all he has ? stamps.
3. Sue has a nickel and 6 pennies, or ?¢ in all.
4. Joe drinks a quart of milk every day. In a week he drinks ? qt.
5. How much does the temperature rise when it goes from 70° to 76°?
6. Ruth had 10 lb. of sugar. She used 2 lb. to make candy. She had ? lb. of sugar left.
7. Ann has 12 lollipops. She wants to share them with Bill. If Ann keeps 5, Bill will get ?.
8. Ned's pencil is 7 inches long. Pete's is 4 inches long. Ned's pencil is ? inches longer than Pete's.
9. Which of these holds the most?  
a 2-quart carton                      a 3-pint jar                      a 5-cup pan
10. Sam keeps a record of his scores on Problem Tests.

He had 8 problems right on the first test. He got 10 points for each problem. His first score was 8 tens, or ?.

How many problems did you have right on Problem Test 1? Give yourself 10 points for each one. What is your score?

Start a record of your scores for the 7 Problem Tests in this book. Keep it in your Arithmetic Folder.



# IT'S CHECK-UP TIME



1. Copy these in order beginning with the smallest: 2 VI 8 IV



2. What time is it by this clock? —————→

3. 1 quart = ? pints

4. 1 foot = ? inches

5. 1 year = ? months

6. 1 pound = ? ounces



7. This can is full of honey. Harry wants to put it into quart jars. How many jars does he need?

8. Would you trade a half dollar for a quarter and 4 nickels?

9. How many degrees colder does it get when the temperature falls from 75° to 70°?

10. Bill stayed at a camp a week. Jay stayed 4 days. Bill stayed ? days longer than Jay.

If you have time, try these —

11.  $37 + 78 = 115$ , so  $115 - 78 = ?$ .

12. How long is it from 11 minutes after 10 A.M., until 10 minutes after 11 A.M.?

J U S T

F O R

F U N



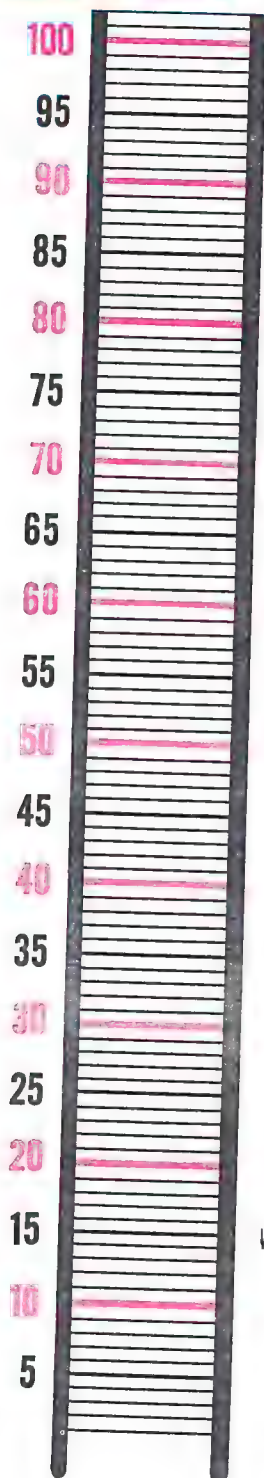
• What is the number? If you take 8 away from it, you have 4 left.

• What is the number? If you divide it into 2 equal parts, you have 6 in each part.

• What is the number? If you put 5 with it, you have 12.

• What is the number? If you add 4 to it, you have 4.





## Up and down by tens

Watch your step as you climb up and down this number ladder!

1. Go to 10, one rod at a time, saying "1, 2, 3," and so on.

Go down, saying, "10, 9, 8," and so on.

2. Go to 30, 2 rods at a time.

Go down again, 2 rods at a time.

3. Go to 100, 5 rods at a time.

Go down, 5 rods at a time.

4. On this ladder there is a resting place every ten rods. Take giant steps:

- Go up to 100, 10 rods at a time.
- Go down again, 10 rods at a time.
- Go up to 100, 20 rods at a time.
- Go down again, 20 rods at a time.

5. Stand at 20. Go to 60, 10 rods at a time.

6. Stand at 50. Go down to 20, 10 rods at a time.

7. Stand at 30. Go up two giant steps, ten rods at a time. This brings you to   ?  .

8. Stand at 60. Go down two giant steps, ten rods at a time. This brings you to   ?  .

Think twice!

How could you go above 100 on a number ladder? Is there any top to a number ladder?



9. Take two giant steps up the ladder, 10 rods at a time. That brings you to ?.

Take 3 more giant steps, 10 rods at a time. That brings you to ?.

2 tens and 3 tens are 5 tens.  
20 and 30 are 50.

$$\left\{ \begin{array}{l} 2 \text{ tens} \\ + 3 \text{ tens} \\ \hline 5 \text{ tens} \end{array} \right\} \left\{ \begin{array}{l} 20 \\ + 30 \\ \hline 50 \end{array} \right.$$

— Use the ladder to find the answers to Exercises 10 and 11.

10. 3 tens and 4 tens are ? tens.  
30 and 40 are ?.

$$\left\{ \begin{array}{l} 3 \text{ tens} \\ + 4 \text{ tens} \\ \hline \end{array} \right\} \left\{ \begin{array}{l} 30 \\ + 40 \\ \hline \end{array} \right.$$

11. 5 tens and 2 tens are ? tens.  
50 and 20 are ?.

$$\left\{ \begin{array}{l} 5 \text{ tens} \\ + 2 \text{ tens} \\ \hline \end{array} \right\} \left\{ \begin{array}{l} 50 \\ + 20 \\ \hline \end{array} \right.$$

12. Start at 50. Go down three giant steps, 10 rods at a time. This brings you to ?.

How many more giant steps of 10 rods each do you have to take to get to the bottom?

3 tens from 5 tens is ? tens.  
30 from 50 is ?.

$$\left\{ \begin{array}{l} 5 \text{ tens} \\ - 3 \text{ tens} \\ \hline \end{array} \right\} \left\{ \begin{array}{l} 50 \\ - 30 \\ \hline \end{array} \right.$$

— Use the ladder to find the answers to Exercises 13 through 15.

13. 4 tens from 7 tens is ? tens.  
40 from 70 is ?.

$$\left\{ \begin{array}{l} 7 \text{ tens} \\ - 4 \text{ tens} \\ \hline \end{array} \right\} \left\{ \begin{array}{l} 70 \\ - 40 \\ \hline \end{array} \right.$$

14. 8 tens - 4 tens is ? tens.  
80 - 40 = ?.

$$\left\{ \begin{array}{l} 8 \text{ tens} \\ - 4 \text{ tens} \\ \hline \end{array} \right\} \left\{ \begin{array}{l} 80 \\ - 40 \\ \hline \end{array} \right.$$

15. 9 tens - 5 tens is ? tens.  
90 - 50 = ?.

$$\left\{ \begin{array}{l} 9 \text{ tens} \\ - 5 \text{ tens} \\ \hline \end{array} \right\} \left\{ \begin{array}{l} 90 \\ - 50 \\ \hline \end{array} \right.$$

## Dimes and tens

1. Peter had 4 dimes. He earned 3 more dimes. Now he has   ? dimes, or   ?¢.

$$\begin{array}{r} 4 \\ + 3 \\ \hline \end{array} \quad \begin{array}{r} 4 \text{ dimes} \\ + 3 \text{ dimes} \\ \hline \end{array} \quad \begin{array}{r} 4 \text{ tens} \\ + 3 \text{ tens} \\ \hline \end{array} \quad \begin{array}{r} 40 \\ + 30 \\ \hline \end{array}$$

2. Marie had 5 dimes. She spent 2 of the dimes. Now she has   ? dimes, or   ?¢ left.

$$\begin{array}{r} 5 \\ - 2 \\ \hline \end{array} \quad \begin{array}{r} 5 \text{ dimes} \\ - 2 \text{ dimes} \\ \hline \end{array} \quad \begin{array}{r} 5 \text{ tens} \\ - 2 \text{ tens} \\ \hline \end{array} \quad \begin{array}{r} 50 \\ - 20 \\ \hline \end{array}$$

3.  $5 + 3 = 8 \longrightarrow 5 \text{ tens} + 3 \text{ tens} = \underline{\quad?} \text{ tens} \longrightarrow 50 + 30 = \underline{\quad?}$

4.  $9 - 5 = 4 \longrightarrow 9 \text{ tens} - 5 \text{ tens} = \underline{\quad?} \text{ tens} \longrightarrow 90 - 50 = \underline{\quad?}$

— Write the answers on folded paper.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
5.	$\begin{array}{r} 40 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ + 30 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ + 30 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ + 30 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ + 50 \\ \hline \end{array}$
6.	$\begin{array}{r} 60 \\ - 20 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ - 30 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ - 10 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ - 30 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ - 30 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ - 20 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ - 50 \\ \hline \end{array}$

— Write the answers only.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
7.	$30 + 40 = \underline{\quad?}$	$50 + 20 = \underline{\quad?}$	$30 + 60 = \underline{\quad?}$	$40 + 50 = \underline{\quad?}$
8.	$60 - 40 = \underline{\quad?}$	$90 - 40 = \underline{\quad?}$	$80 - 60 = \underline{\quad?}$	$70 - 20 = \underline{\quad?}$

9. Jane had 30¢. Her mother gave her 50¢ more. How much did Jane have then?

10. Peter had 80¢. He lost some. He has 50¢ left. How much did he lose?



## Adding dimes and pennies

1. Sue had 21¢. She earned 32¢. All together she has   ?  ¢.

 You may use coins to find  $21¢ + 32¢$ .

Sue had 21¢.

Sue earned 32¢.

Sue has   ?   dimes   ?   pennies, or   ?  ¢.



 Here is another way to add 21¢ and 32¢.

- Add the pennies.  $1 + 2 = 3$

- Add the dimes.  $2 + 3 = 5$

2 dimes 1 penny  
3 dimes 2 pennies  

---

5 dimes 3 pennies

$21¢ + 32¢ = \underline{\hspace{1cm}}?$  dimes and  $\underline{\hspace{1cm}}?$  pennies, or  $\underline{\hspace{1cm}}?$ ¢.

 Here is a third way to do the addition.

- Write the example this way: 

- Add the pennies.  $1 + 2 = 3$ . Write the 3 in pennies column.

- Add the dimes.  $2 + 3 = 5$ . Write the 5 in dimes column.  $21¢ + 32¢ = ?¢$ .

$$\begin{array}{r} 2 \text{ } 1\cancel{\phi} \\ 3 \text{ } 2\cancel{\phi} \end{array}$$
$$\begin{array}{r} 21\cancel{0} \\ 32\cancel{0} \\ \hline 53\cancel{0} \end{array}$$

- 2. Use each of the three ways to show that:**

- $35¢ + 23¢ = 5$  dimes and 8 pennies, or  $58¢$ .

- $62¢ + 17¢ = 7$  dimes and 9 pennies, or  $79¢$ .

— Copy and add. Use the third way shown above.

*a*

***b***

C

*d*

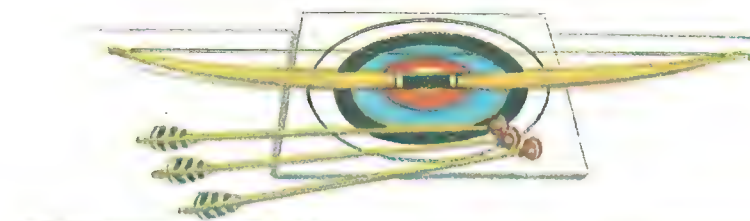
e

3.  $51¢ + 42¢$     $73¢ + 22¢$     $85¢ + 12¢$     $53¢ + 33¢$     $42¢ + 21¢$

4.  $63¢ + 22¢$     $14¢ + 35¢$     $25¢ + 33¢$     $45¢ + 21¢$     $75¢ + 23¢$



ARCHERY SETS 82¢  
PAPER TARGETS 15¢ea.



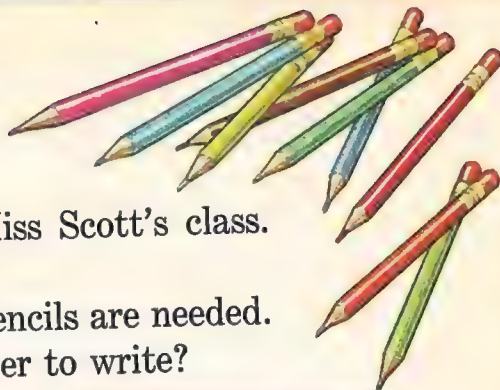
## Everyday problems

1. Bob bought a bow and arrow set and one paper target. How much did he spend all together?
2. Jane has 35¢. Bob has 42¢ more than Jane. How much does Bob have?
3. Peter had 32¢. He found a quarter. How much did he then have?
4. Sue says the sum of 43¢ and 26¢ is 69¢. Is she right?
5. A quarter, four dimes, and three pennies = ? ¢.

— Copy and add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
6.	61¢ <u>32¢</u>	14¢ <u>55¢</u>	25¢ <u>31¢</u>	74¢ <u>13¢</u>	13¢ <u>16¢</u>	45¢ <u>52¢</u>	37¢ <u>32¢</u>	53¢ <u>42¢</u>
7.	74¢ <u>24¢</u>	23¢ <u>54¢</u>	65¢ <u>23¢</u>	54¢ <u>42¢</u>	33¢ <u>52¢</u>	62¢ <u>16¢</u>	27¢ <u>21¢</u>	37¢ <u>62¢</u>
8.	16¢ <u>23¢</u>	52¢ <u>13¢</u>	41¢ <u>55¢</u>	31¢ <u>16¢</u>	36¢ <u>23¢</u>	47¢ <u>31¢</u>	54¢ <u>25¢</u>	48¢ <u>41¢</u>
9.	32¢ <u>45¢</u>	47¢ <u>42¢</u>	45¢ <u>24¢</u>	56¢ <u>32¢</u>	26¢ <u>61¢</u>	72¢ <u>12¢</u>	33¢ <u>25¢</u>	32¢ <u>63¢</u>

# Adding two-place numbers



1. There are 14 girls and 15 boys in Miss Scott's class. She wants to give each child a pencil.

Pat and Jeff added to find how many pencils are needed. Explain their work. Whose way is easier to write?

## PAT'S WAY

$$\begin{array}{r} 14 = 1 \text{ ten } 4 \text{ ones} \\ + 15 = + 1 \text{ ten } 5 \text{ ones} \\ \hline \text{Pencils needed: } 2 \text{ tens } 9 \text{ ones} = 29 \end{array}$$

## JEFF'S WAY

$$\begin{array}{r} 14 \text{ pencils} \\ + 15 \text{ pencils} \\ \hline 29 \text{ pencils} \end{array}$$

— Copy and add. Begin at the top in each addition.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
2.	$\begin{array}{r} 35 \\ 64 \end{array}$	$\begin{array}{r} 31 \\ 42 \end{array}$	$\begin{array}{r} 12 \\ 86 \end{array}$	$\begin{array}{r} 31 \\ 61 \end{array}$	$\begin{array}{r} 12 \\ 24 \end{array}$	$\begin{array}{r} 32 \\ 37 \end{array}$	$\begin{array}{r} 41 \\ 58 \end{array}$	$\begin{array}{r} 43 \\ 22 \end{array}$
3.	$\begin{array}{r} 73 \\ 21 \end{array}$	$\begin{array}{r} 56 \\ 31 \end{array}$	$\begin{array}{r} 34 \\ 14 \end{array}$	$\begin{array}{r} 31 \\ 45 \end{array}$	$\begin{array}{r} 11 \\ 68 \end{array}$	$\begin{array}{r} 22 \\ 52 \end{array}$	$\begin{array}{r} 25 \\ 43 \end{array}$	$\begin{array}{r} 75 \\ 14 \end{array}$
4.	$\begin{array}{r} 71 \\ 18 \end{array}$	$\begin{array}{r} 24 \\ 43 \end{array}$	$\begin{array}{r} 22 \\ 61 \end{array}$	$\begin{array}{r} 33 \\ 52 \end{array}$	$\begin{array}{r} 47 \\ 42 \end{array}$	$\begin{array}{r} 25 \\ 34 \end{array}$	$\begin{array}{r} 16 \\ 42 \end{array}$	$\begin{array}{r} 86 \\ 13 \end{array}$

5. Write additions to find how many pencils are in 2 of these packs; in 3; in 4.

6. 45 red pencils and 34 green pencils are ? pencils.  
34 red pencils and 45 green pencils are ? pencils.

Think twice!

— Put your paper away. In Exercise 2 above, find:

- the three additions with sums nearest to 100.
- the two additions with sums nearest to 70.

*Practice for excellence.* Do Practice Set 3, page 314.

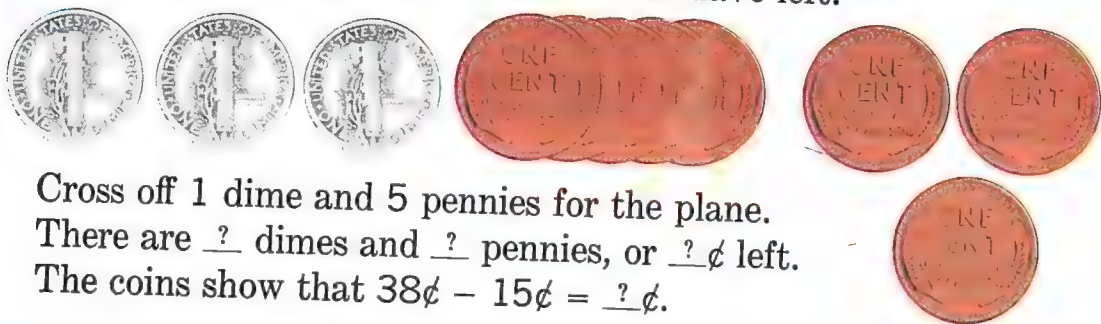


# Subtracting dimes and pennies

1. Bob has 3 dimes and 8 pennies. He has   ?  ¢ in all.  
He wants to buy this 15-cent plane.  $\longrightarrow$   
How much money will Bob have left?



- 1 Draw coins to find how much Bob will have left.



Cross off 1 dime and 5 pennies for the plane.  
There are   ?   dimes and   ?   pennies, or   ?  ¢ left.  
The coins show that  $38¢ - 15¢ = \underline{\hspace{1cm}}$ ¢.

- 2 Explain this way of finding  $38¢ - 15¢$ :  $\longrightarrow$

3 dimes 8 pennies
- 1 dime 5 pennies
2 dimes 3 pennies, or 23¢

- 3 Use this short way to find  $38¢ - 15¢$ .  $\longrightarrow$

► Subtract the pennies. 5 from 8 is 3. Write the 3 in the pennies column.

► Subtract the dimes. 1 from 3 is 2. Write the 2 in the dimes column.

The subtraction shows that  $38¢ - 15¢ = \underline{\hspace{1cm}}$ ¢.

$\begin{array}{r} 38¢ \\ - 15¢ \\ \hline \end{array}$
$\begin{array}{r} 38¢ \\ - 15¢ \\ \hline 23¢ \end{array}$

2. Jim has 25¢. He spent 12¢. Use each of the three ways above to find how much Jim has left. Which way is the easiest to write?

3. Copy and subtract. Use the short way shown above.

a	b	c	d	e	f	g	h
96¢	87¢	56¢	69¢	78¢	49¢	74¢	85¢
<u>62¢</u>	<u>43¢</u>	<u>23¢</u>	<u>47¢</u>	<u>53¢</u>	<u>13¢</u>	<u>54¢</u>	<u>13¢</u>



# Subtracting two-place numbers

1. The children in Miss Scott's class plan to make 29 paper-bag wigs for a party.

They have finished 16 wigs. How many more must they make?

Pat and Jeff subtracted to find how many more wigs are needed. Explain their work. Whose way is easier to write?



## PAT'S WAY

$$\begin{array}{r} 29 = 2 \text{ tens } 9 \text{ ones} \\ - 16 = 1 \text{ ten } 6 \text{ ones} \\ \hline \text{Wigs needed: } 1 \text{ ten } 3 \text{ ones} = 13 \end{array}$$

## JEFF'S WAY

$$\begin{array}{r} 29 \text{ wigs} \\ - 16 \text{ wigs} \\ \hline 13 \text{ wigs} \end{array}$$

— Copy and subtract.

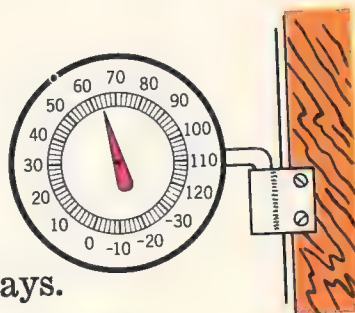
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
2.	$\begin{array}{r} 98 \\ 72 \\ \hline \end{array}$	$\begin{array}{r} 97 \\ 61 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ 52 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 57 \\ \hline \end{array}$	$\begin{array}{r} 69 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 14 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 97 \\ 51 \\ \hline \end{array}$
3.	$\begin{array}{r} 86 \\ 31 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ 64 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 61 \\ \hline \end{array}$	$\begin{array}{r} 99 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 77 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 13 \\ \hline \end{array}$
4.	$\begin{array}{r} 48 \\ 13 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 25 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 21 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 64 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 25 \\ \hline \end{array}$

5. Jane cut 14 inches from a yard of ribbon. How many inches did she have left?

6. The temperature fell from 78° to 64°. How many degrees did it fall?

7. From November 14 to November 28 is   ?   days.

*Practice for excellence.* Do Practice Set 25, page 320.



# Checking addition

1. Jane made 24 raisin cookies and 32 nut cookies.  
How many cookies did she make all together?

Begin at the top.

► Add the ones.  $4 + 2 = \underline{\quad ? \quad}$ .

► Add the tens.  $2 + 3 = \underline{\quad ? \quad}$ .

Jane made  $\underline{\quad ? \quad}$  cookies.

Now *check* the answer to see if it is right.

Begin at the bottom.

► Add the ones.  $2 + 4 = 6$ .

► Add the tens.  $3 + 2 = 5$ .

Again you find that Jane made  $\underline{\quad ? \quad}$  cookies.

$$\begin{array}{r} 24 \\ + 32 \\ \hline 56 \end{array}$$

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
2.	$\begin{array}{r} 32 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 51 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ 21 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 32 \\ \hline \end{array}$
3.	$\begin{array}{r} 6 \\ 3 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 4 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 4 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 5 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 3 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 5 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 5 \\ 4 \\ \hline \end{array}$

Think twice!

Write the answers only.

- |  |   |
|--|---|
| <i>a</i>   | <i>b</i>  |
| 4. $56 + 40 = 96$ , so $56 + 41 = \underline{\quad ? \quad}$ | $47 + 25 = 72$ , so $46 + 25 = \underline{\quad ? \quad}$ |
| 5. $38 + 60 = 98$ , so $38 + 61 = \underline{\quad ? \quad}$ | $47 + 25 = 72$ , so $48 + 25 = \underline{\quad ? \quad}$ |
| 6. $38 + 60 = 98$ , so $38 + 59 = \underline{\quad ? \quad}$ | $23 + 41 = 64$ , so $43 + 21 = \underline{\quad ? \quad}$ |
| 7. $43 + 26 = 69$ , so $26 + 43 = \underline{\quad ? \quad}$ | $35 + 52 = 87$ , so $55 + 32 = \underline{\quad ? \quad}$ |

# Checking subtraction

1. Use 4 dimes and 8 pennies to do the subtraction in Box A. When you take 35¢ from 48¢, you have ? left.

## A THE SUBTRACTION

Bill had at first    48¢  
 Bill spent            - 35¢  
 Bill had left        13¢

## B THE CHECK

Bill had left        13¢  
 Bill spent            + 35¢  
 Bill had at first    48¢

2. Now use the same coins to check the answer to your subtraction in Exercise 1. Put together the 13¢ Bill had left and the 35¢ he spent. You should have the ?¢ he had at first. Do you?

3. In B above, you see a way to check the subtraction in A above. Explain the check.

4. Make up a rule for checking a subtraction.

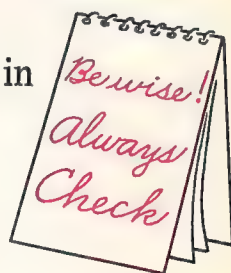
— Subtract and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
5.	24 <u>13</u>	56 <u>25</u>	84 <u>63</u>	73 <u>21</u>	36 <u>14</u>	49 <u>26</u>	68 <u>33</u>	48 <u>13</u>
6.	98 <u>57</u>	76 <u>44</u>	54 <u>31</u>	39 <u>26</u>	58 <u>12</u>	74 <u>52</u>	69 <u>32</u>	89 <u>32</u>

Think twice!

- Find the missing numbers.

$$87 - 53 = \underline{?} \quad 87 - \underline{?} = 34 \quad \underline{?} - 53 = 34 \quad 34 + \underline{?} = 87$$





# Facts about 13



1. Tom and Sue are playing Pick-Up-13. If Tom picks up an 8 card, Sue must pick up a 5 card because 8 and 5 are ?.

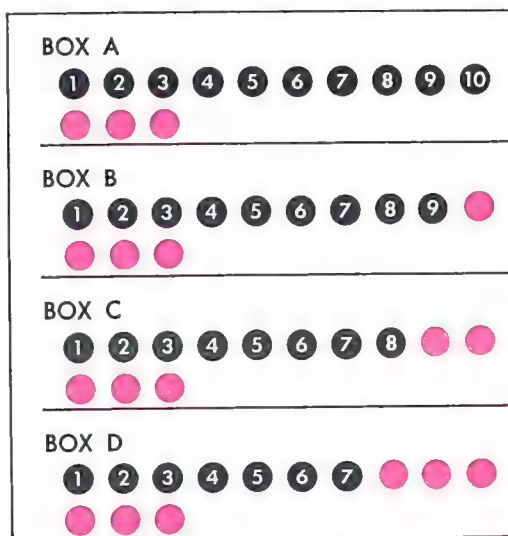
What card must Sue pick up if Tom picks up a 7? a 6? a 9? a 4? a 5?

2. Box A shows the fact  $10 + 3 = 13$ . Explain.

3. What addition facts does Box B show? Box C? Box D?

4. What subtraction facts do Boxes B, C, and D show?

5. Write the number facts you learned in Exercises 3 and 4.



6. Use two nickels and three pennies to find the answers.

$$8 + 5 = \underline{\quad}$$

$$5 + 8 = \underline{\quad}$$

$$13 - 5 = \underline{\quad}$$

$$13 - 8 = \underline{\quad}$$

— Tell the missing numbers.

7.  $6 + 6 = 12$ , so  $6 + 7 = \underline{\quad}$ .      10.  $10 + 3 = 13$ , so  $9 + 4 = \underline{\quad}$ .

8.  $7 + 3 = 10$ , so  $7 + 6 = \underline{\quad}$ .      11.  $8 + 5 = 13$ , so  $13 - 8 = \underline{\quad}$ .

9.  $9 + 3 = 12$ , so  $9 + 4 = \underline{\quad}$ .      12.  $9 + 4 = 13$ , so  $8 + \underline{\quad} = 13$ .

• TRY IT

Draw dot pictures to show that:

• 3 fours and 1 are 13

• 4 threes and 1 are 13

• 2 sixes and 1 are 13

• 2 fives and 3 are 13

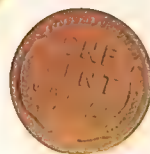
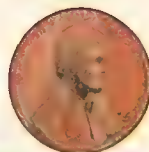
# Facts about 13

1. Roy has 13¢:  $\longrightarrow$   
He wants to give 5¢ to his brother.

How can he do this?

Roy said, "I can give him the 3 pennies.  
Then I must give him 2¢ out of the dime."

Is Roy right? He will have   ?  ¢ left.



2. Look at Roy's 13¢ in Exercise 1. Tell how he can give his brother 9¢; 7¢; 8¢.

— Use dimes and pennies to show that:

3.  $9¢ + 4¢ = 1 \text{ dime and } \underline{\hspace{1cm}} \text{ pennies.}$   $9 + 4 = 10 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

4.  $8¢ + 5¢ = 1 \text{ dime and } \underline{\hspace{1cm}} \text{ pennies.}$   $8 + 5 = 10 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

5.  $7¢ + 6¢ = 1 \text{ dime and } \underline{\hspace{1cm}} \text{ pennies.}$   $7 + 6 = 10 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

6. Write the number family for each set of numbers.

6, 7, 13

9, 4, 13

8, 5, 13

9, 3, 12

— Find the missing number in each of these examples.

*a*

*b*

*c*

*d*

7.  $\underline{\hspace{1cm}} + 8 = 13$      $7 + \underline{\hspace{1cm}} = 13$      $4 + \underline{\hspace{1cm}} = 13$      $13 - \underline{\hspace{1cm}} = 9$

8.  $9 + \underline{\hspace{1cm}} = 13$      $13 - \underline{\hspace{1cm}} = 5$      $\underline{\hspace{1cm}} + 6 = 13$      $\underline{\hspace{1cm}} + 5 = 13$

9. Cover the answers below. Practice until you know each answer.

$$\begin{array}{r} 9 \\ + 4 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 4 \\ + 9 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 8 \\ + 5 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 5 \\ + 8 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 7 \\ + 6 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 6 \\ + 7 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 13 \\ - 9 \\ \hline 4 \end{array}$$

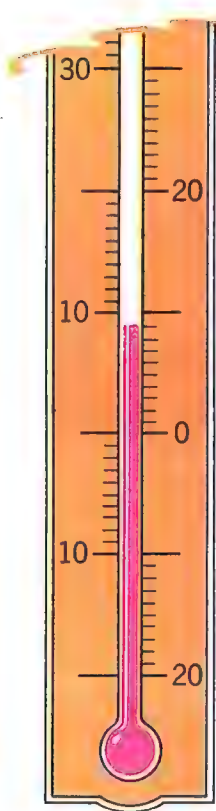
$$\begin{array}{r} 13 \\ - 4 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 13 \\ - 8 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 13 \\ - 5 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 13 \\ - 7 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 13 \\ - 6 \\ \hline 7 \end{array}$$



## Using facts about 13

1. At 8 minutes after 2 o'clock, Miss Scott said, "We'll play for 5 minutes." The class played until ?.
2. Jeff had a nickel and 3 pennies. He earned another nickel. Then he had ?.
3. Harry has a dime and 3 pennies. How much will he have left if he spends 4¢? 6¢? 5¢? 8¢? 9¢? 7¢?
4. There are 6 white stripes and 7 red stripes in the flag of the U.S.A. How many stripes are there in all?
5. The temperature fell from  $13^{\circ}$  to  $9^{\circ}$ . It fell  $?$  $^{\circ}$ . Use a thermometer to prove your answer.
6. What is the date one week from Dec. 5? Dec. 3? Dec. 6? Dec. 4?
7. What date comes a week before Dec. 13? Dec. 10? Dec. 12? Dec. 11?

— Practice until you can say every answer correctly.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
8.	9	13	8	7	13	7	9	13
	<u>+ 4</u>	<u>- 7</u>	<u>+ 5</u>	<u>+ 4</u>	<u>- 8</u>	<u>+ 6</u>	<u>+ 3</u>	<u>- 9</u>
9.	13	5	13	8	4	13	6	9
	<u>- 6</u>	<u>+ 8</u>	<u>- 5</u>	<u>+ 3</u>	<u>+ 9</u>	<u>- 4</u>	<u>+ 7</u>	<u>+ 2</u>

10. Write the answers to Exercises 8 and 9. Make Help-Yourself Cards for facts you do not know. Study the cards. Then write the answers again.

KNOW YOUR FACTS Test yourself on the facts you have already studied. Do Exercise 12 on page 30, and Exercise 10 on page 34.

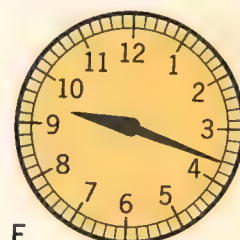
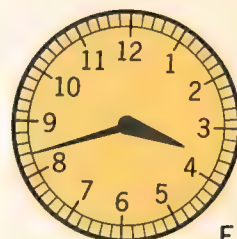
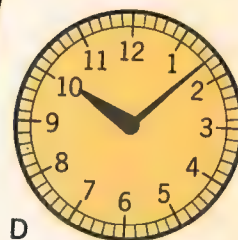
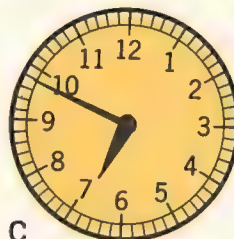
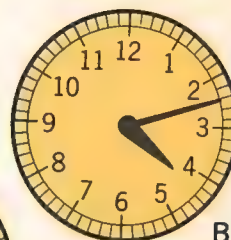
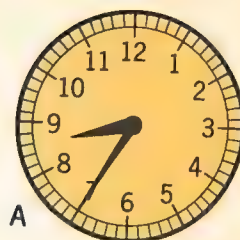




# Keeping up in arithmetic

## Oral

1. What did you do yesterday at 10 A.M.? 10 P.M.?
2. Count to 100 by 10's; by 5's; by 2's.
3. Which is larger, 68 or 86? 63 or 67?
4. Name the months in order; the days of the week.
5.  $23 + 45 = 68$ , so  $45 + 23 = \underline{\quad}$ .
6.  $98 - 25 = 73$ , so  $98 - 73 = \underline{\quad}$ .
7. What time is it by these clocks?  $\longrightarrow$
8. The sum of 2, 5, and 3 is  $\underline{\quad}$ .
9. 1 yd. =  $\underline{\quad}$  in.  
1 ft. =  $\underline{\quad}$  in.  
1 yd. =  $\underline{\quad}$  ft.  
1 lb. =  $\underline{\quad}$  oz.
10. 1 quarter =  $\underline{\quad}$  cents  
1 quarter =  $\underline{\quad}$  nickels  
1 qt. =  $\underline{\quad}$  pt.  
1 gal. =  $\underline{\quad}$  qt.



## Written

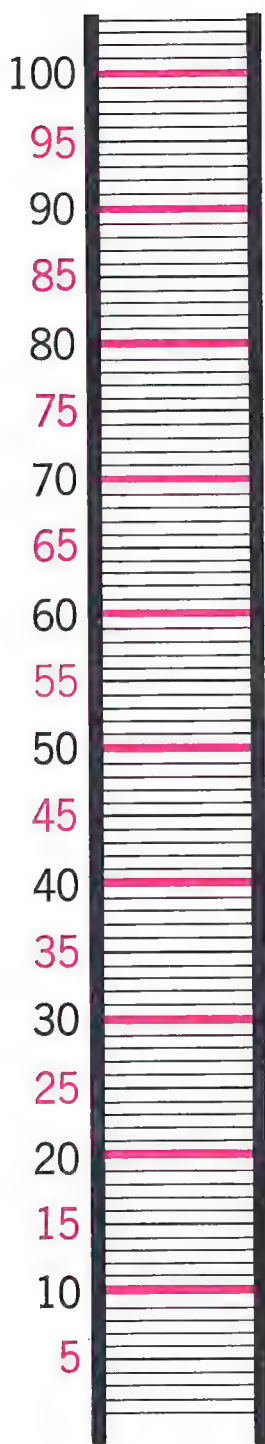
— Add and check.

— Subtract and check.

- |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. 53     | 2. 27     | 3. 35     | 4. 75     | 5. 94     | 6. 86     |
| <u>34</u> | <u>62</u> | <u>64</u> | <u>32</u> | <u>62</u> | <u>32</u> |

7.  $6¢ + 5¢ = \underline{\quad}¢$      $13¢ - 7¢ = \underline{\quad}¢$      $12¢ - 4¢ = \underline{\quad}¢$

8. Write the number that means 3 tens and 9 ones.
9. Jim had 89¢. He spent 35¢. He had  $\underline{\quad}$  left.
10. 36 white ducks and 21 yellow ducks are  $\underline{\quad}$  ducks.



## Big steps on the number ladder

1. Start on rod 12 of the number ladder. Go up 10 rods at a time. Say, “12, 22, 32,” and so on until you come to 92.

2. Start on rod 94. Go down 10 rods at a time. Say, “94, 84, 74,” and so on until you come to 4.

3. Start on rod 15. Go up 20 rods at a time; 30 rods at a time.

4. Start on rod 95. Go down 20 rods at a time; 30 rods at a time.

— Find the answers on the number ladder.

	<i>a</i>	<i>b</i>	<i>c</i>
5.	$24 + 10$	$35 + 20$	$42 + 20$
6.	$36 + 30$	$74 + 10$	$57 + 30$
7.	$76 - 10$	$45 - 20$	$52 - 20$
8.	$95 - 20$	$84 - 10$	$63 - 30$

— Find the answers without the number ladder.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
9.	$\begin{array}{r} 84 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ + 30 \\ \hline \end{array}$	$\begin{array}{r} 55 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ + 40 \\ \hline \end{array}$
10.	$\begin{array}{r} 95 \\ - 10 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ - 20 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ - 30 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ - 10 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ - 40 \\ \hline \end{array}$
11.	$\begin{array}{r} 95 \\ - 30 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ - 40 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ + 30 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ - 40 \\ \hline \end{array}$

# Zeros in addition

— Tell what facts you will use to find these sums; to *check* the sums. Then copy, add, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1. 30	46	53	12	60	36	20	25
<u>68</u>	<u>50</u>	<u>20</u>	<u>70</u>	<u>28</u>	<u>50</u>	<u>23</u>	<u>40</u>

2. Find the sum of a quarter and a dime.

3. Tom helped Miss Scott count school books. He counted 30 arithmetics, 20 spellers, and 25 readers.

To find how many books there were, write:  $\longrightarrow$

► Add the ones.  $0 + 0 + 5 = \underline{\quad ? \quad}$

► Add the tens.  $3 + 2 + 2 = \underline{\quad ? \quad}$  There were  $\underline{\quad ? \quad}$  books.

30
20
<u>25</u>
75

— Copy, add, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
4. 23	10	76	31	45	30	30	50
24	49	10	50	13	20	35	20
<u>30</u>	<u>30</u>	<u>12</u>	<u>10</u>	<u>20</u>	<u>30</u>	<u>23</u>	<u>12</u>
5. 25¢	40¢	16¢	30¢	21¢	20¢	12¢	43¢
20¢	10¢	30¢	15¢	50¢	30¢	27¢	20¢
<u>40¢</u>	<u>30¢</u>	<u>22¢</u>	<u>50¢</u>	<u>20¢</u>	<u>48¢</u>	<u>40¢</u>	<u>35¢</u>

Think twice!

Put your paper away. Find the three examples in Exercise 4 with sums nearest to 90.

*Practice for excellence.* Do Practice Set 4, page 314.



$$\begin{array}{r} 5 \\ -4 \\ \hline ? \end{array}$$

$$\begin{array}{r} 5 \\ -5 \\ \hline ? \end{array}$$

$$\begin{array}{r} 5 \\ -0 \\ \hline ? \end{array}$$

## Subtracting zeros

1. Tom had 5 cents. He spent 4 cents. He had ?¢ left.
2. Jane had 5 cents. She spent 5 cents. She had ?¢ left.
3. Carl had 5 cents. He spent 0 cents. He had ?¢ left.
4. Think of some number. Now subtract 0 from it. What is your answer?



- Make up a rule about subtracting zero from any number.
- Make up a rule about subtracting a number from itself.

— Tell what facts you use in these examples.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
5.	$\begin{array}{r} 58 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 81 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ -70 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ -50 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ -20 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ -10 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ -60 \\ \hline \end{array}$

6. Copy Exercise 5 and write the answers. Check.

7. Write a subtraction to find how much is left when you take 10¢ from 25¢; 10¢ from 50¢.

— Copy, subtract, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
8.	$87 - 50$	$86 - 72$	$65 - 30$	$78 - 33$	$88 - 30$
9.	$93 - 20$	$94 - 50$	$92 - 21$	$86 - 43$	$72 - 20$

10. The difference between 85 and 50 is ?.

11. 79 is ? more than 50.

13. 40 is ? less than 88.

12. 30 and ? make 65.

14. 20 and ? make 28.

*Practice for excellence.* Do Practice Set 26, page 320.

# No pencils, please

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	7	5	4	5	4	2	2	4	3
	2	0	4	4	3	4	3	5	4
	<u>+ 1</u>	<u>+ 6</u>	<u>+ 5</u>	<u>+ 3</u>	<u>+ 5</u>	<u>+ 5</u>	<u>+ 8</u>	<u>+ 2</u>	<u>+ 6</u>

— Tell the missing numbers.

- A dime = ? ¢    1 yard = ? feet    1 lb. = ? oz.
- A nickel = ? ¢    1 quart = ? pints    1 gal. = ? qt.
- A dollar = ? ¢    1 week = ? days    1 pt. = ? cups
- A quarter = ? ¢    1 foot = ? inches    1 yd. = ? in.
- A half dollar = ? ¢    1 year = ? months    1 hr. = ? min.

7. Sue says she can't do these examples. Can you?

$$24 - 56 = \underline{\quad} \quad 1 \text{ qt.} = \underline{\quad} \text{ yd.} \quad 8 + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - 8 = \underline{\quad}$$

$$8. \text{ IX} = \underline{\quad} \quad \text{VI} = \underline{\quad} \quad \text{XII} = \underline{\quad} \quad \text{IV} = \underline{\quad} \quad \text{XI} = \underline{\quad}$$

— Now use your pencil. Copy, work, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
9.	97	84	69	86	78	87	79	97
	<u>- 42</u>	<u>- 32</u>	<u>- 37</u>	<u>- 42</u>	<u>- 30</u>	<u>- 57</u>	<u>- 53</u>	<u>- 35</u>
10.	43	15	30	63	36	50	82	28
	<u>+ 35</u>	<u>+ 74</u>	<u>+ 57</u>	<u>+ 36</u>	<u>+ 40</u>	<u>+ 27</u>	<u>+ 10</u>	<u>+ 30</u>

Think twice!

11. Without looking at your paper, find the two examples in Exercise 9 with answers nearest to 50.

12. Without looking at your paper, find the two examples in Exercise 10 with answers nearest to 90.

## Be your own teacher OPTIONAL

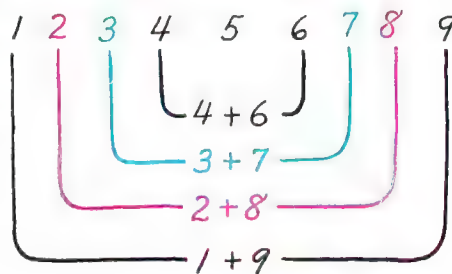
### Problem solving help

See how many different ways the boys and girls in your class can find to do these problems.

1. Find the cost of three games at 15¢ each.
2. Bill wants to buy a baseball shirt for \$4.25 and a cap for \$.95. How much will he need for both?
3. Four girls bought a box of candies. There were 20 pieces in the box. They shared the candy equally.  
How many pieces did each girl take?
4. Tom's father gave him \$2.00 for his birthday. He spent 35¢ to go to the movies.  
How much money did Tom have left?
5. Ann needs six feet of cloth for a Halloween dress. How many yards of cloth should she buy?
6. Jim's teacher asked him to find the sum of 1, 2, 3, 4, 5, 6, 7, 8, 9. Jim thought a minute and then said, "45."

His teacher asked how he found the sum so quickly.

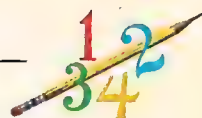
Jim showed her this picture and said, "This is what I thought." Can you explain Jim's picture?



7. Write 24, using the digit 2, three times.
8. Write 30, using the digit 3, three times.
9. Write 40, using the digit 4, three times.
10. Write 48, using the digit 4, three times.



# SELF-HELP TEST 1



If you make a mistake in a Self-Help Test, you can help yourself. If your mistake is in Exercise 1, you can find help on page 67. Where can you find help for Exercise 2?

— Copy, find the answers, and check.

1.  $36 + 43$  [67]      2.  $87¢ - 54¢$  [68]      3.  $51¢ + 47¢$  [65]      4.  $87 - 24$  [69]

5. Write the numbers from 77 to 82. [15]

6. What number means 5 tens and 6? [14]

7. Find the sum of: 43, 20, 35. [77]

8. What time does this clock show? [58]



9. What is the difference between 13 and 9? [36]

10. Write 4 facts in the 8, 4, 12 number family. [33]

11. Write a 2-digit number with 7 in ones place and 5 in tens place. [17]

12. Tom has 13 hens. Five are black. The others are white. How many white hens has he? [25]

# SELF-HELP TEST 2



1. What part of this circle is white?

Write your answer in figures. [55]



2. A half dollar, 4 nickels, and a dime =  $\underline{\quad}¢$ . [56]

3. 1 ft. =  $\underline{\quad}$  in. [45]

7. 1 gal. =  $\underline{\quad}$  qt. [47]

4. 1 yd. =  $\underline{\quad}$  ft. [45]

8. 1 hr. =  $\underline{\quad}$  min. [42]

5. 1 yd. =  $\underline{\quad}$  in. [45]

9. 1 lb. =  $\underline{\quad}$  oz. [48]

6. 1 qt. =  $\underline{\quad}$  pt. [47]

10. 1 year =  $\underline{\quad}$  months [52]

# IT'S CHECK-UP TIME



1. Add and check: 
$$\begin{array}{r} 59 \\ + 20 \\ \hline \end{array}$$

2. Subtract and check: 
$$\begin{array}{r} 95 \\ - 43 \\ \hline \end{array}$$

3. Find the sum of 4, 4, and 3. Check your answer.

4. Write two subtraction facts this addition teaches. →

$\begin{array}{r} 9 \\ + 4 \\ \hline 13 \end{array}$
--

5. Find the sum of  $34 + 20 + 40$ .

6. There are two numbers that together make 78. One of them is 30. What is the other?

7. Tom has a nickel and some pennies. In all he has 13¢. How many pennies has he?

8. Miss Bell's class has 24 maple leaves and 35 oak leaves. In all, they have ? leaves.

9. Jerry has a quarter. He wants to buy a ball for 49¢. How much more money does he need?

10. The temperature was  $50^{\circ}$  at 9 A.M. It was  $65^{\circ}$  at noon. How much warmer was it at noon?

**If you have time, try these –**

11.  $39 + 47 = 86$ , so  $39 + 48 = \underline{\quad}$ .      12.  $2 \text{ lb.} = \underline{\quad} \text{ oz.}$



J U S T F O R F U N

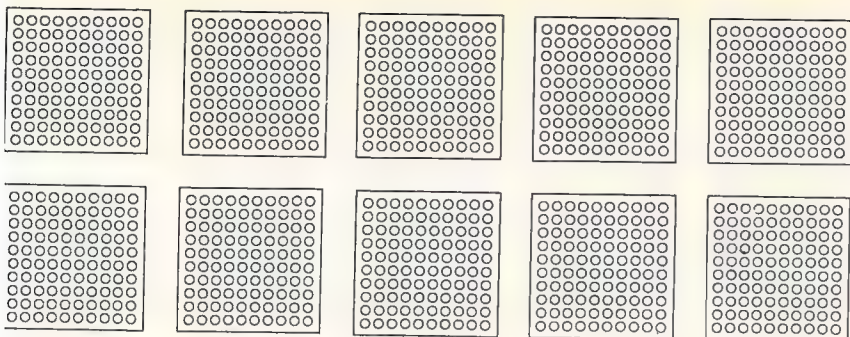
How many girls are playing on the fence? How many boys?

How many children in all?

Each girl has a brother playing on the fence.

How can this be?





## Three-place numbers

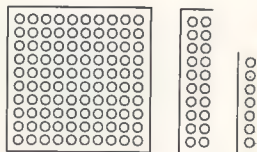
1. Every child who joins Junior Red Cross gets a Red Cross tab. How many cards of Red Cross tabs are shown above?

- On one card there are one hundred (100) tabs.
- On two cards there are two hundred (200) tabs.
- On ten cards there are   ?   hundred tabs.

Ten hundred is called *one thousand* (1,000).

2. Count the tabs above by hundreds.

3. This picture shows 1 card of 100 tabs, 2 rows of 10 tabs each, and 7 single tabs. It shows   ?   tabs.



127 is a *3-place* number.

It means 1 hundred 2 tens 7 ones.

4. 325 is   ?   hundreds   ?   tens   ?   ones.  $\longrightarrow$
- 210 is   ?   hundreds   ?   ten   ?   ones.  $\longrightarrow$
- 604 is   ?   hundreds   ?   tens   ?   ones.  $\longrightarrow$

Hundreds	Tens	Ones
3	2	5
2	1	0
6	0	4

5. Look at each number in Exercise 4. Tell what digit is in hundreds place; tens place; ones place.

6. Janet says, "In a 3-place number, the digit in hundreds place is worth more than the other digits." Explain what she means.





## Reading and writing three-place numbers

1. Webster School got 785 Red Cross tabs. They received   ?   cards of 100 tabs,   ?   rows of 10 tabs each, and   ?   single tabs.

When you put together 700 and 80 and 5, you have seven hundred eighty-five.

2. In 785, the 8 shows there are   ?   tens in tens place. What does the 7 show? the 5?

3. What does the 7 show in 723? in 674? in 467?

4. When you put together 300 and 2, you have 3 hundreds and 2 ones, or 302. What does the zero show?

5. What does the zero show in 101? in 110? in 140?

6. Read each of these numbers.

169      504      401      860      119      906

7. Write the numbers above as your teacher reads them.

8. Write the number that means:

- 3 hundreds 7 tens 4 ones.
- 2 hundreds 9 tens 7 ones.
- 6 hundreds 3 tens 0 ones.
- 8 hundreds 0 tens 0 ones.
- 4 hundreds 0 tens 5 ones.
- 7 hundreds 8 tens 0 ones.

9. Write these numbers using digits.

- five hundred forty-five
- two hundred fifty
- nine hundred sixty-one
- four hundred ninety-three
- four hundred seven
- six hundred six

10. Count from 98 to 110. Write the numbers.

11. Count from 293 to 302. Write the numbers.

## Practice in counting

- Count by 1's from:

86 to 100      186 to 200      886 to 900      986 to 1000

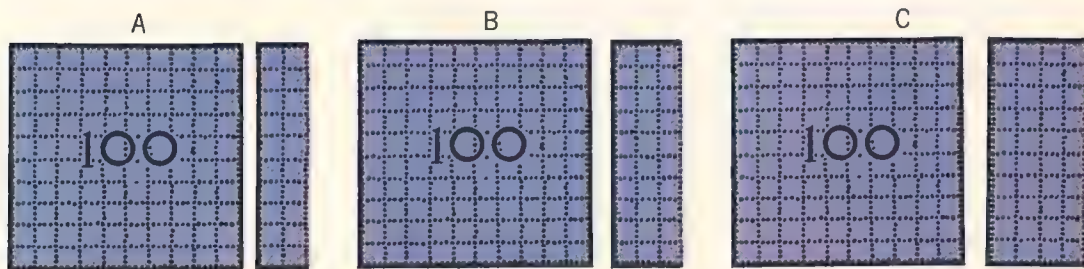
- What is the largest 2-place number? the smallest?

- What is the largest 3-place number? the smallest?

- Count by 5's from 75 to 115; from 390 to 425.

- Count by 100's to 500; to 1,000.

- What number comes next after 909? 929? 990? 999?



- How many stamps are in Picture A? in B? in C?

- Which picture shows 13 tens? 14 tens? 12 tens?

- $100 = 10$  tens;  $40 = 4$  tens; so  $140 = \underline{\quad}$  tens

- $100 = 10$  tens;  $80 = \underline{\quad}$  tens; so  $180 = \underline{\quad}$  tens

- $150 = \underline{\quad}$  tens       $160 = \underline{\quad}$  tens       $170 = \underline{\quad}$  tens

- $180 = \underline{\quad}$  tens       $200 = \underline{\quad}$  tens       $250 = \underline{\quad}$  tens

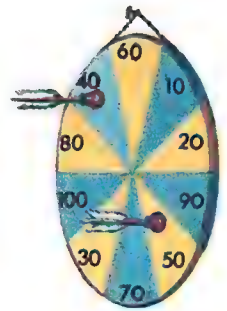
- $10$  tens =  $\underline{\quad}$  hundred;  $20$  tens =  $\underline{\quad}$  hundreds.

- $12$  tens =  $\underline{\quad}$  hundred and  $\underline{\quad}$  tens, or  $\underline{\quad}$ .       $100 + 20 = \underline{\quad}$

- $13$  tens =  $\underline{\quad}$  hundred and  $\underline{\quad}$  tens, or  $\underline{\quad}$ .       $100 + 30 = \underline{\quad}$

- $15$  tens =  $\underline{\quad}$  hundred and  $\underline{\quad}$  tens, or  $\underline{\quad}$ .       $100 + 50 = \underline{\quad}$

- $25$  tens =  $\underline{\quad}$  hundreds and  $\underline{\quad}$  tens, or  $\underline{\quad}$ .       $200 + 50 = \underline{\quad}$



## Adding tens

1. Sue hit 50 and 40 with her darts. What is her total score?

2. George hit 40 and 60.

These two additions show how to find his total score. Which way of adding do you like?

$$\begin{array}{r} 4 \text{ tens} \\ 6 \text{ tens} \\ \hline 10 \text{ tens} = 100 \end{array} \quad \begin{array}{r} 40 \\ + 60 \\ \hline 100 \end{array}$$

3. 10 tens = 100

11 tens = ?

12 tens = ?

4. 13 tens = ?

14 tens = ?

15 tens = ?

5. Sue hit 50 and 70. These additions both show how to find her score.

Which way do you like better?

$$\begin{array}{r} 5 \text{ tens} \\ 7 \text{ tens} \\ \hline 12 \text{ tens} = 120 \end{array} \quad \begin{array}{r} 50 \\ + 70 \\ \hline 120 \end{array}$$

6. Which children made the highest scores below? the lowest scores? Whose scores were the same?

Jane	Bob	Tom	Polly	Nan	John	Ann	Belle
70	90	50	60	80	70	50	90
<u>40</u>	<u>30</u>	<u>80</u>	<u>60</u>	<u>50</u>	<u>60</u>	<u>60</u>	<u>40</u>

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
7.	60	90	60	50	50	40	30	90
	<u>50</u>	<u>40</u>	<u>70</u>	<u>50</u>	<u>70</u>	<u>90</u>	<u>90</u>	<u>20</u>



# Adding tens and ones

1. Linda and Jeff found the sum of 62 and 74. Here is their work. Explain Linda's work; Jeff's work. Whose way do you like better?

*Linda*

62 → 6 tens 2 ones

74 → 7 tens 4 ones

13 tens 6 ones = 136

*Jeff*

62

74

136

2. Two bus loads of children went to visit the firehouse. Each bus carried 34 children. How many children went?

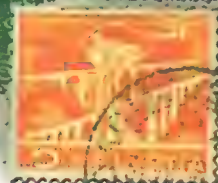
3. A table is 60 inches long. Will a cloth that measures 1 yard 30 inches be long enough to cover the table?

4. Bill has 53 stamps. David has 74. Together they have ? stamps.

5. David had 74 stamps. His uncle gave him 50 more. Now he has ? stamps.

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
6.	82 <u>44</u>	45 <u>90</u>	73 <u>56</u>	36 <u>82</u>	94 <u>31</u>	64 <u>64</u>	65 <u>74</u>	56 <u>83</u>
7.	80 <u>58</u>	45 <u>71</u>	52 <u>87</u>	55 <u>62</u>	24 <u>93</u>	75 <u>63</u>	96 <u>31</u>	87 <u>32</u>
8.	62 <u>41</u>	50 <u>70</u>	72 <u>32</u>	42 <u>84</u>	83 <u>35</u>	92 <u>37</u>	55 <u>62</u>	23 <u>95</u>



Practice for excellence. Do Practice Set 5, page 315.

## Subtracting tens

To subtract 80 from 120, Peggy and John did these subtractions. Explain each. Whose work do you like better?

*Peggy*

$$\begin{array}{r} 120 \longrightarrow 12 \text{ tens} \\ 80 \longrightarrow -8 \text{ tens} \\ \hline 4 \text{ tens} = 40 \end{array}$$

*John*

$$\begin{array}{r} 120 \\ -80 \\ \hline 40 \end{array}$$

1. 13 tens - 6 tens = ? tens

130 - 60 = ?

2. 12 tens - 7 tens = ? tens

120 - 70 = ?

— Copy, subtract, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
3.	130	110	120	130	130	110	120
	<u>90</u>	<u>20</u>	<u>60</u>	<u>60</u>	<u>80</u>	<u>30</u>	<u>80</u>

4.	110	130	110	120	120	120	110
	<u>50</u>	<u>50</u>	<u>70</u>	<u>50</u>	<u>70</u>	<u>30</u>	<u>60</u>

5. Here are 2 ways to subtract 73 from 129. Explain each.

$$\begin{array}{l} 129 = 12 \text{ tens } 9 \text{ ones} \\ 73 = 7 \text{ tens } 3 \text{ ones} \\ \hline 5 \text{ tens } 6 \text{ ones} = 56 \end{array}$$

$$\begin{array}{r} 129 \\ -73 \\ \hline 56 \end{array}$$

— Copy, subtract, and check.

6.	125	124	135	116	139	128	127
	<u>93</u>	<u>62</u>	<u>61</u>	<u>70</u>	<u>46</u>	<u>73</u>	<u>34</u>

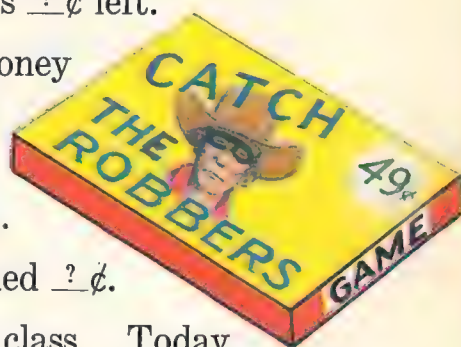
7.	136	117	132	123	104	137	129
	<u>75</u>	<u>57</u>	<u>81</u>	<u>52</u>	<u>64</u>	<u>82</u>	<u>83</u>

*Practice for excellence.* Do Practice Set 27, page 320.

# Problems and practice

— Check your answer to each problem below.

1. Molly had 95¢. She spent 32¢. She has ?¢ left.
2. Bill has a quarter. How much more money does he need to buy this game?
3. Tom weighs 69 pounds. Ann weighs 58 pounds. Tom is ? pounds heavier than Ann.
4. Jim earned 43¢ and 35¢. In all he earned ?¢.
5. There are 28 children in Miss Green's class. Today only 23 children are present. How many are absent?



## Practice for speed and accuracy

6. By checking, find the two subtractions that are *wrong*.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
127	48	138	115	128	135	52
<u>45</u>	<u>16</u>	<u>44</u>	<u>32</u>	<u>45</u>	<u>73</u>	<u>21</u>
82	32	94	83	82	62	21

— Copy, subtract, and check.

7. 130	128	136	104	120	107	138
<u>50</u>	<u>48</u>	<u>96</u>	<u>94</u>	<u>50</u>	<u>83</u>	<u>70</u>
8. 127	130	118	138	125	105	126
<u>64</u>	<u>60</u>	<u>35</u>	<u>42</u>	<u>82</u>	<u>63</u>	<u>53</u>
9. 109	113	107	128	115	133	120
<u>22</u>	<u>33</u>	<u>32</u>	<u>45</u>	<u>23</u>	<u>42</u>	<u>30</u>
10. 127	138	116	136	104	126	119
<u>54</u>	<u>56</u>	<u>42</u>	<u>66</u>	<u>42</u>	<u>65</u>	<u>57</u>



# Reading and writing numbers

1. Beginning with one, put these in the right order.

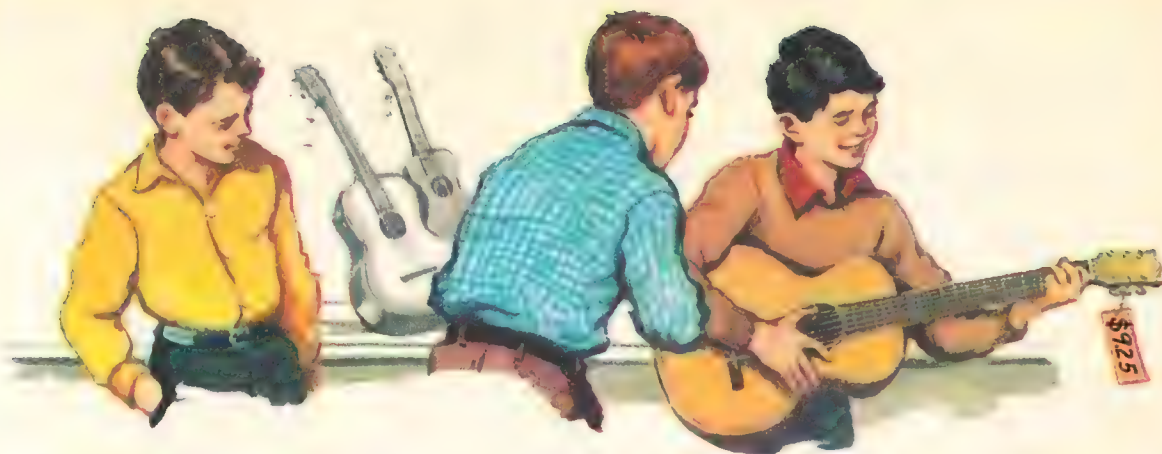
one	nine	two	eight	four
six	three	five	seven	ten

Write the numbers in columns *a*, *b*, and *c*, using digits.

<i>a</i>	<i>b</i>	<i>c</i>
2. ten	zero	sixty-two
3. eleven	ten	thirty-three
4. twelve	twenty Ned	eighty-six
5. thirteen	thirty	forty-eight
6. fourteen Bill	forty	seventy-five
7. fifteen	fifty	fifty-four
8. sixteen	sixty	one hundred fifty-three
9. seventeen	seventy	five hundred forty-five
10. eighteen	eighty	nine hundred sixty-one
11. nineteen	ninety	two hundred fifty
12. twenty	one hundred	four hundred ninety-three

13. In this race, who is:

Don	Ed	Bob	Joe	Sam	Ted	Al	Tom
first?	sixth?	ninth?	fifth?	seventh?			
eighth?	second?	tenth?	fourth?	third?			



## Reading and writing money numbers

1. Sam wants this guitar. How much does it cost?

\$9.25 is read "*9 dollars and 25 cents.*"

\$9.25 means *9 dollars, 2 dimes, and 5 pennies.*

This is a dollar sign: \$

The dot in \$9.25 is the *decimal point* or *cents point*.

1 cent is written *1¢* or *\$.01*.

1 dollar is written *\$1* or *\$1.00*.

2. \$18.60 is read   ? dollars and   ? cents.

\$18.60 means   ? dollars,   ? dimes, and   ? pennies.

3. \$15.00 is read   ? dollars.

\$15.00 means   ? dollars,   ? dimes, and   ? pennies.

4. Read the prices below. Which is largest? smallest?

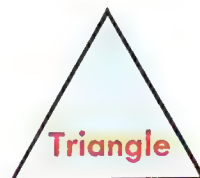
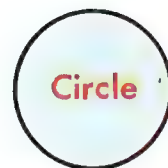
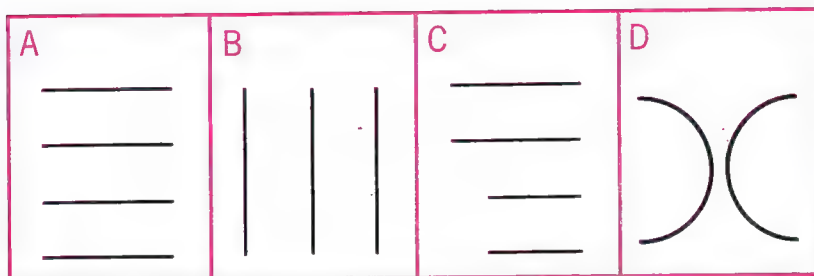
9¢	\$ .73	\$ .02	\$ .40	\$5.00	\$18.08
\$ .07	\$ .37	79¢	\$4.98	\$1.75	\$9.80

5. Write the prices in Exercise 4 that are:

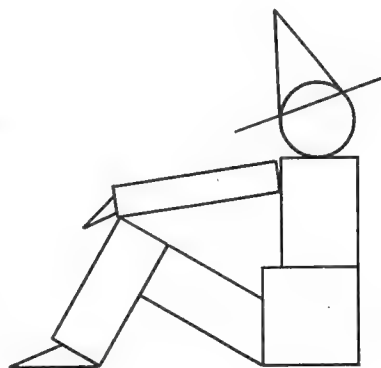
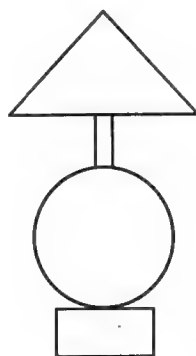
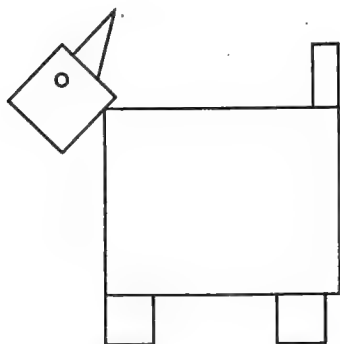
- less than \$1.00
- more than \$5.00
- between \$5.00 and \$10.00
- close to \$5.00
- close to \$10.00
- between \$1.00 and \$2.00

# Shapes have names

1. Read the name of each of these shapes: →
2. Name some things that have the shape of a *circle*; a *square*; a *triangle*; a *rectangle*.
3. What shape could you make with the lines in Box A? B? C? D?



4. Draw a circle. A milk bottle top will help you.
5. Draw a square; a triangle; a rectangle. Your ruler will help you.
6. Put the drawings you made in your Arithmetic Folder.
7. Find the circles in these pictures; the squares; the triangles; the rectangles.





## Finding missing numbers

1. Copy this:  $\longrightarrow$

If you write a 7 in your triangle, what must you write in your circle? Why?

$$\triangle ? + \bigcirc ? = 13$$

If you write a 9 in your triangle, what must you write in your circle? Why?

$$\triangle ? - \bigcirc ? = 5$$

2. Make three copies of this:  $\longrightarrow$

Write numbers in the triangles and circles to make three true statements.

— Many different pairs of numbers may be used to make each exercise below a true statement. Name five pairs for each.

*a*

3.  $\square ? + \bigcirc ? = 12$

4.  $\bigcirc ? - \triangle ? = 4$

5.  $\triangle ? + \square ? = 11$

*b*

$\triangle ? - \bigcirc ? = 6$

$\bigcirc ? - \square ? = 7$

$\square ? + \bigcirc ? = 10$

6.  $5 + N = 12$  means “ $5 + \text{what number} = 12$ .”

Does  $N = 12 - 5$ ?

— What number does  $N$  stand for in each of these examples?

7.  $5 + N = 11$        $8 + N = 13$        $N + 4 = 12$        $2 + N = 11$

8.  $N + 9 = 12$        $3 + N = 10$        $4 + N = 13$        $N + 6 = 13$

9.  $11 - N = 6$        $12 - N = 8$        $N - 4 = 9$        $N - 7 = 5$

Think twice!

— Find what number  $N$  stands for in each example.

$6 + 3 + N = 13$

$7 + N + 2 = 11$

$N + 3 + 3 = 13$

# Facts about 14

1. Joan and David found two nickels and four pennies. How much money did they find all together?

2. They want to share the 14¢. How much will David get if Joan gets 5¢? 6¢? 7¢? 8¢? 9¢?

Cover coins in the picture to prove each answer.



3. Tell how to share 14¢ equally.

4. Box A teaches  $10 + 4 = 14$  and  $14 - 10 = 4$ . Explain.

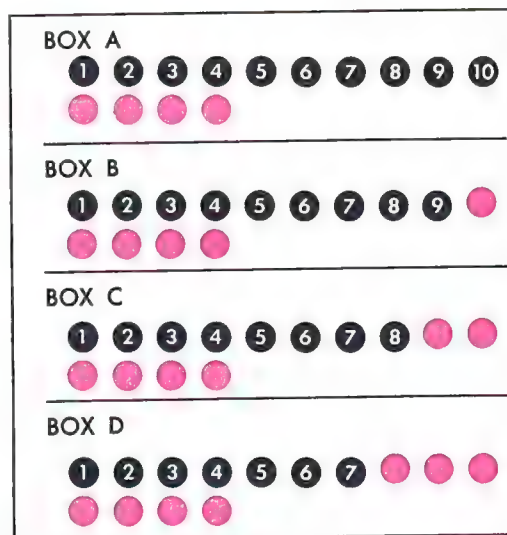
5. What addition and subtraction facts do Boxes B, C, and D teach? Write them.

6.  $6 + 7 = 13$ , so  $7 + 6 = ?$ .

7.  $10 + 4 = 14$ , so  $9 + ? = 14$ .

8.  $8 + 6 = 14$ , so  $14 - 8 = ?$ .

9.  $6 + 6 = 12$ , so  $6 + 8 = ?$ .



10. What number does N stand for in each example?

$$7 + N = 14 \quad 5 + N = 14 \quad 14 - N = 6 \quad 14 - N = 5$$



— Draw dot pictures to show that:

● 3 fours and 2 are 14

● 4 threes and 2 are 14

● 2 sixes and 2 are 14

● 2 fives and 4 are 14

# Facts about 14

— Use a dime and 14 pennies for Exercises 1 through 3.

1.  $9¢ + 5¢ = 1 \text{ dime and } \underline{\quad} \text{ pennies; } \longrightarrow 9¢ + 5¢ = \underline{\quad} ¢.$

2.  $8¢ + 6¢ = 1 \text{ dime and } \underline{\quad} \text{ pennies; } \longrightarrow 8¢ + 6¢ = \underline{\quad} ¢.$

3.  $7¢ + 7¢ = 1 \text{ dime and } \underline{\quad} \text{ pennies; } \longrightarrow 7¢ + 7¢ = \underline{\quad} ¢.$

4. To take 5¢ from 14¢ (1 dime and 4 pennies), take away the 4 pennies. Then change the dime to 10 pennies and take away   . You have    left.

— What number does N stand for in each of the examples below?

5.  $9 + N = 14$      $N + 6 = 14$      $N + 5 = 14$      $N + 8 = 14$

6.  $14 - N = 8$      $14 - N = 5$      $14 - N = 6$      $14 - N = 9$

7.  $N + 5 = 13$      $13 - N = 7$      $N + 5 = 12$      $13 - N = 4$

8. Write four facts about each of these sets of numbers.

9, 5, 14

7, 6, 13

8, 6, 14

5, 7, 12

9. Write six subtraction facts with answers of 8.

10. Cover the answers below. Practice until you can say each answer without looking.

$$\begin{array}{r} 9 \\ + 5 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 5 \\ + 9 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 8 \\ + 6 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 6 \\ + 8 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 7 \\ + 7 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 14 \\ - 9 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 14 \\ - 5 \\ \hline 9 \end{array}$$

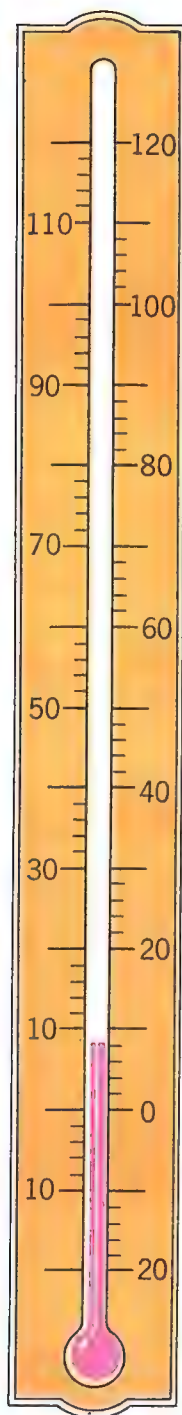
$$\begin{array}{r} 14 \\ - 8 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 14 \\ - 6 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 14 \\ - 7 \\ \hline 7 \end{array}$$



## Using facts about 14



Write the fact you use to find each answer.

1. Peter has a dime and 4 pennies. If he spends 5¢, how much will he have left?

2. When the temperature rises from 8° to 14°, how many degrees does it rise?

Use this thermometer to prove your answer.

3. How many days are there in two weeks?

Use a calendar to prove your answer.

4. A box of crayons costs 14¢. Jane has a nickel and 4¢. How much more money does she need?

5. Doris read 14 pages in her reading book. Polly read 6 pages. Doris read   ?   more pages than Polly.

6. How much will a 9-cent kite and a 5-cent ball of string cost? Use nickels and pennies to prove your answer.

7. Mary has a nickel and 3 pennies. Bill has a nickel and 1 penny. Together they have   ?   nickels and   ?   pennies. This proves that  $8¢ + 6¢ = \underline{\hspace{1cm}}¢$ .

Practice until you can say every answer correctly.

8.	9	6	14	8	6	14	12	7
	<u>+ 5</u>	<u>+ 7</u>	<u>- 8</u>	<u>+ 5</u>	<u>+ 8</u>	<u>- 5</u>	<u>- 5</u>	<u>+ 7</u>

9.	13	8	7	5	12	14	14	14
	<u>- 9</u>	<u>+ 6</u>	<u>+ 4</u>	<u>+ 9</u>	<u>- 6</u>	<u>- 7</u>	<u>- 6</u>	<u>- 9</u>

10. Write the answers to Exercises 8 and 9 on folded paper. Make Help-Yourself Cards for facts you do not know. Study the cards. Then write the answers again.

## Finding answers without a pencil OPTIONAL

1. Here are two ways to find  $83 + 45$  without a pencil.  
Explain each way.

- Think:  $80 + 40 = 120$ ;  $120 + 8 = 128$
- Think:  $83 + 40 = 123$ ;  $123 + 5 = 128$

Which way do you like better?

— Tell how you think to find these sums. Use the way you like best.

*a*

2.  $55 + 74$

*b*

$86 + 62$

*c*

$43 + 84$

*d*

$74 + 72$

3.  $63 + 66$

$66 + 81$

$34 + 80$

$52 + 85$

4.  $56 + 93$

$45 + 93$

$72 + 37$

$63 + 73$

5.  $36 + 73$

$36 + 82$

$55 + 81$

$65 + 42$

6.  $43 + 70$

$70 + 38$

$57 + 72$

$65 + 73$

7. Here is an easy way to find  $135 - 52$  without a pencil.  
Explain it.

Think:  $135 - 50 = 85$ ;  $85 - 2 = 83$ .

— Tell how you think to do these subtractions.

8.  $149 - 51$

$119 - 97$

$108 - 73$

$139 - 46$

9.  $147 - 75$

$134 - 50$

$117 - 81$

$116 - 42$

10.  $128 - 64$

$149 - 63$

$136 - 73$

$129 - 75$

11.  $109 - 36$

$113 - 43$

$118 - 82$

$108 - 38$

12.  $136 - 55$

$129 - 72$

$107 - 65$

$138 - 73$

# Keeping up in arithmetic

## Oral

1. Each number fact below has three other members in its number family. Name them.

$$4 + 8 = 12 \quad 7 + 6 = 13 \quad 11 - 4 = 7 \quad 14 - 9 = 5$$

2. Count to 1,000 by 100's; by 50's; by 25's.

3. Tell: the time; the temperature; the date.

4. Here is Jim's money.  $\longrightarrow$   
How much does he have?



5. 10 more than 57 is ?.      10 more than 157 is ?.

10 less than 69 is ?.      10 less than 169 is ?.

6. 1 year = ? months.    1 quarter = ? nickels.    1 quart = ? pints.

7. What numbers do these Roman numerals stand for?

X      VI      III      V      IX      VII      IV      VIII

8. How do you check an addition? a subtraction?

## Written

1.	56	2.	35	3.	42	4.	137	5.	129	6.	145
	$\begin{array}{r} + 93 \\ \hline \end{array}$		$\begin{array}{r} + 84 \\ \hline \end{array}$		$\begin{array}{r} + 87 \\ \hline \end{array}$		$\begin{array}{r} - 82 \\ \hline \end{array}$		$\begin{array}{r} - 98 \\ \hline \end{array}$		$\begin{array}{r} - 73 \\ \hline \end{array}$

7. What number is 20 less than 89? than 189?

8.  $200 + 70 + 6 = ?$ .

9. Using the digits 2, 4, and 6, write the largest number you can; the smallest number.

10. Write the number that means 3 hundreds 7 tens 5 ones.



# Facts about 15

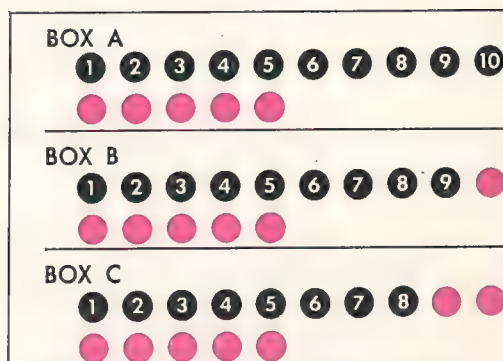


1. Here is Bob's money. He has   ?  ¢.
2. Bob wants to buy a ball and a whistle. How much can he spend for the whistle if the ball costs 6¢? 7¢? 8¢? 9¢? Cover coins in the picture to prove each answer.

3. Box A shows:  $10 + 5 = \underline{\quad}$ .

4. What addition and subtraction facts do Boxes B and C show?

5. Write the facts you learned in Exercise 4. Make up a problem for each fact.



6.  $7 + 7 = 14$ , so  $7 + 8 = \underline{\quad}$
7.  $15 - 10 = 5$ , so  $15 - 9 = \underline{\quad}$
8.  $15 - 8 = 7$ , so  $15 - 7 = \underline{\quad}$
9.  $14 - 9 = 5$ , so  $15 - 9 = \underline{\quad}$
10.  $15 - 5 = 10$ , so  $15 - 6 = \underline{\quad}$
11.  $6 + 9 = 15$ , so  $15 - 9 = \underline{\quad}$

- | <i>a</i>                        | <i>b</i>                    | <i>c</i>                     | <i>d</i>                     |
|---------------------------------|-----------------------------|------------------------------|------------------------------|
| 12. $8 + 7 = \underline{\quad}$ | $7 + 8 = \underline{\quad}$ | $15 - 7 = \underline{\quad}$ | $15 - 8 = \underline{\quad}$ |
| 13. $9 + 6 = \underline{\quad}$ | $6 + 9 = \underline{\quad}$ | $15 - 9 = \underline{\quad}$ | $15 - 6 = \underline{\quad}$ |
| 14. $8 + N = 15$                | $9 + N = 15$                | $6 + N = 15$                 | $7 + N = 15$                 |

15. Cover the answers below. Practice until you can say each answer without looking.

8	7	15	15
$\begin{array}{r} + 7 \\ 15 \end{array}$	$\begin{array}{r} + 8 \\ 15 \end{array}$	$\begin{array}{r} - 8 \\ 7 \end{array}$	$\begin{array}{r} - 7 \\ 8 \end{array}$

9	6	15	15
$\begin{array}{r} + 6 \\ 15 \end{array}$	$\begin{array}{r} + 9 \\ 15 \end{array}$	$\begin{array}{r} - 9 \\ 6 \end{array}$	$\begin{array}{r} - 6 \\ 9 \end{array}$



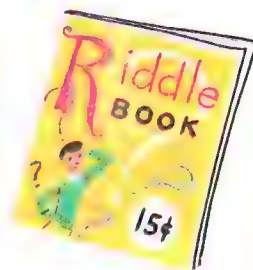
## Using facts about 15

1. When January 8 comes on Monday, the next Monday will be January   ?  ; the Monday before was January   ?  .

2. Can two girls share 15 pennies equally? What is the best they can do?

3. Susie has three nickels. If she buys a 6-cent candy bar, how much money will she have left?

4. Sam has 9¢. How much more does he need to buy this book of riddles?



5. Joe has a nickel and 4 pennies, or   ?  ¢. Ted has a nickel and 1 penny, or   ?  ¢. Together they have   ?   nickels and   ?   pennies, or   ?   cents. ( $9¢ + 6¢ = \text{?}¢$ )

— Practice until you can say every answer correctly.

6.	14	14	7	15	7	8	15	14
	<u>- 9</u>	<u>- 8</u>	<u>+ 8</u>	<u>- 8</u>	<u>+ 6</u>	<u>+ 7</u>	<u>- 9</u>	<u>- 6</u>

7.	8	15	9	7	15	9	6	5
	<u>+ 6</u>	<u>- 7</u>	<u>+ 6</u>	<u>+ 7</u>	<u>- 6</u>	<u>+ 5</u>	<u>+ 9</u>	<u>+ 9</u>

8. Write the answers to Exercises 6 and 7 on folded paper. Make Help-Yourself Cards for any facts you do not know. Study your cards. Then write the answers again.

$$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$$

KNOW YOUR FACTS Do Exercise 10, page 96.

## PROBLEM TEST 2

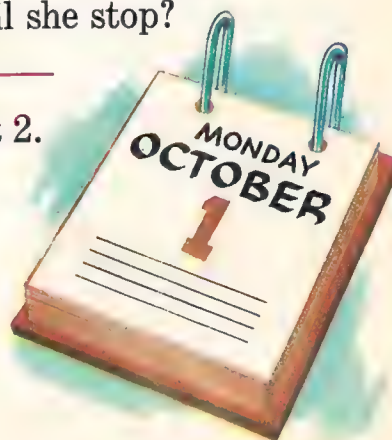


1. Sandra has a dime, 2 nickels, and a penny. Can she buy a 25-cent comic book?
2. Tom wants a 29-cent kite. He has a dime and a nickel. He needs   ?  ¢ more.
3. In a pet show there were 3 dogs, 6 cats, and 1 goat. How many pets were there in all?
4. Jeff had 12¢. He spent a nickel. He had   ?  ¢ left.
5. Bill did 14 additions; 5 were wrong.   ?   were right.
6. There are 127 children in a camp. 63 are boys. How many are girls?
7. Nancy did 22 additions and 30 subtractions. She did   ?   examples in all.
8. Do an addition to show how many inches are in 2 feet.
9. Joe wants 3 quarts of grape drink. It comes in pint bottles. How many bottles should he buy?
10. Diana wants to practice her music for 20 minutes. She began at 10 minutes after 8. When will she stop?

Fill in your Problem Test Record for Test 2.

Think twice!

- On what day of the week will October ninth come?  $\longrightarrow$
- What number is third, when you begin with 501 and count backward?





# IT'S CHECK-UP TIME



1. Add and check. 
$$\begin{array}{r} 63 \\ + 85 \\ \hline \end{array}$$

2. Subtract and check. 
$$\begin{array}{r} 159 \\ - 66 \\ \hline \end{array}$$

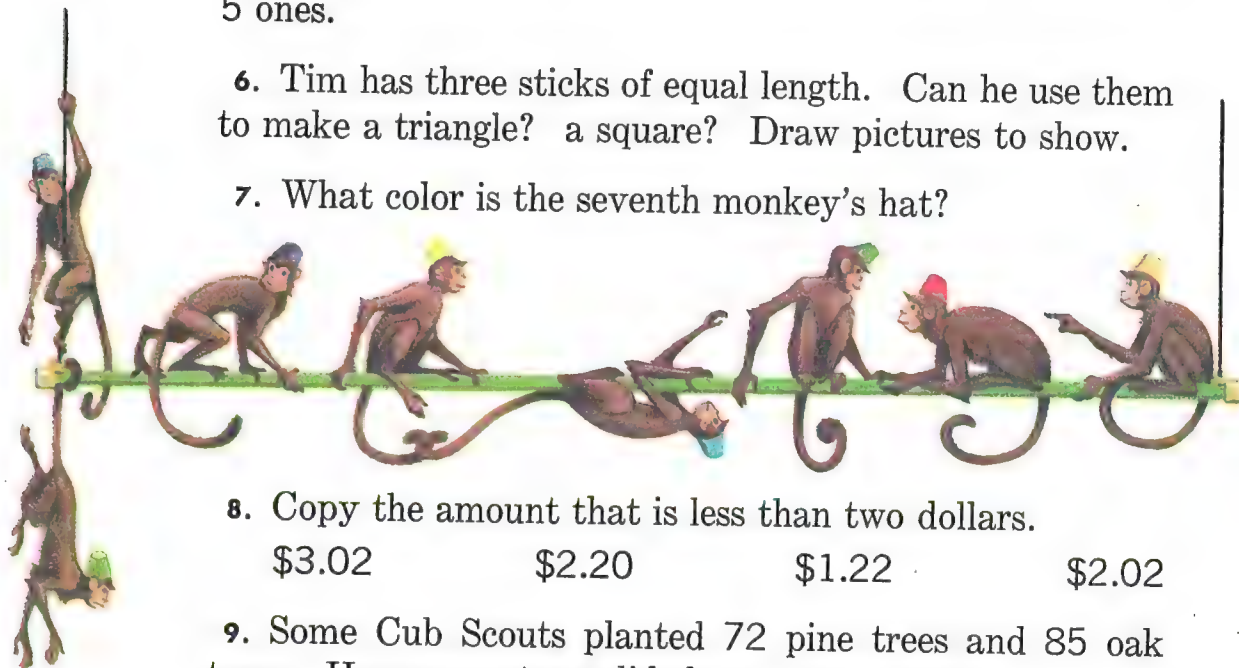
3. Write the sum.  $600 + 30 + 5$ .

4. Count by 1's from 498 to 502. Write the numbers.

5. Write the number that means 3 hundreds, 0 tens, and 5 ones.

6. Tim has three sticks of equal length. Can he use them to make a triangle? a square? Draw pictures to show.

7. What color is the seventh monkey's hat?



8. Copy the amount that is less than two dollars.

\$3.02

\$2.20

\$1.22

\$2.02

9. Some Cub Scouts planted 72 pine trees and 85 oak trees. How many trees did they plant in all?

10. There are 149 children at a day camp; 83 are boys;   ?   are girls.

**If you have time, try these –**

11. Write the largest number you can using the digits 7, 9, 9.

12. Write five pairs of numbers which will make this a true statement:  $\triangle ? - \bigcirc ? = 7$


# Changing pennies to dimes

1. Use dimes and pennies to show that:

- 4 dimes 13 pennies = 5 dimes 3 pennies, or 53¢.
- 2 dimes 14 pennies = 3 dimes 4 pennies, or 34¢.
- 3 dimes 12 pennies = 4 dimes 2 pennies, or 42¢.
- 6 dimes 15 pennies = 7 dimes 5 pennies, or 75¢.

2. Jeff is saving to buy a pair of stilts.

Jeff had 28¢:  $\longrightarrow$  

He earned 35¢:  $\longrightarrow$  

Now Jeff has   ?   dimes and   ?   pennies.



3. Jeff said, "My 13 pennies = 1 dime and 3 pennies. So my 5 dimes 13 pennies = 6 dimes 3 pennies, or 63¢."

Use dimes and pennies to show Jeff is right.

4. Here is another way to find how much money Jeff has.

He had 28¢:  $\longrightarrow$  2 dimes 8 pennies

He earned 35¢:  $\longrightarrow$  3 dimes 5 pennies

He has in all:  $\longrightarrow$  5 dimes 13 pennies, or   ?  ¢.

- ▶ Change the 13 pennies to 1 dime 3 pennies.
- ▶ Put the 1 dime with the 5 dimes in the dimes column.
- ▶ Keep the 3 pennies in the pennies column.
- ▶ Jeff has 6 dimes and   ?   pennies, or   ?  ¢.

5. Jeff has 63¢. Bill has 19¢. Together they have   ?  .

Jeff has 63¢:  $\longrightarrow$  6 dimes 3 pennies

Bill has 19¢:  $\longrightarrow$  1 dime 9 pennies

Together they have:  $\longrightarrow$  7 dimes 12 pennies, or   ?  ¢.

# Changing pennies to dimes in addition

1. Here is a short way to find the sum of 63¢ and 19¢.

- ▶ Think of 63¢ as 6 dimes 3 pennies.  
Think of 19¢ as 1 dime 9 pennies.
- ▶ Add the pennies.  $3 + 9 = 12$
- ▶ *Change the 12 pennies to 1 dime 2 pennies.*  
Write the 2 in the pennies column.  
Write the 1 above the dimes column.
- ▶ Add the dimes.  $1 + 6 + 1 = 8$   
Write the 8 in the dimes column.  
 $63¢ + 19¢ = 8 \text{ dimes } 2 \text{ pennies, or } \underline{\hspace{1cm}}¢.$

$$\begin{array}{r} 1 \\ 63¢ \\ 19¢ \\ \hline 82¢ \end{array}$$

2. Do these additions orally. Then copy the examples without the answers, add, and check.

a	b	c	d	e	f	g
26¢	66¢	57¢	45¢	39¢	65¢	78¢
37¢	29¢	18¢	29¢	36¢	27¢	15¢
63¢	95¢	75¢	74¢	75¢	92¢	93¢

3. Copy, add, and check.

56¢	47¢	19¢	34¢	73¢	48¢	44¢
37¢	45¢	16¢	27¢	18¢	26¢	37¢

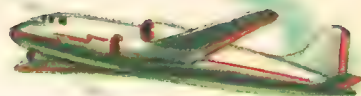
4. Paul earned 25¢ for painting a bench, and 65¢ for shoveling snow. How much did he earn in all?

5. Teddy earned 45¢ for cleaning his father's car. He earned 17¢ for running errands. How much did Teddy earn all together?





# Changing ones to tens in addition



1. 19 third-grade pupils and 24 fourth-grade pupils took an airplane ride. How many pupils took the ride?

► Add the ones. 9 ones + 4 ones = 13 ones.

► Change the 13 ones to 1 ten 3 ones.

Write the 3 in ones place.

Write the 1 above tens place.

► Add the tens. 1 + 1 + 2 = 4.

Write the 4 in tens place. 43 pupils took the ride.

$19 + 24 = 43$ .

$$\begin{array}{r} 1 \\ 19 \\ + 24 \\ \hline 43 \end{array}$$

Changing ones to tens in addition is often called *carrying*.

2. On the plane were 27 boys and 16 girls, or ? children.

3. The children flew 47 miles to Chicago. Then they flew back again. How many miles did they fly?

4. At the airport Jack spent 35¢ for an airplane book, and 25¢ for a sandwich. In all he spent ?¢.

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
5.	$\begin{array}{r} 37 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 29 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 29 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 17 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 18 \\ \hline \end{array}$
6.	$\begin{array}{r} 30 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ 49 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ 19 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 59 \\ \hline \end{array}$

Think twice!

Do Exercise 5 without a pencil. For the first example, think:  $30 + 50 = 80$ ;  $80 + 15 = ?$ .

*Practice for excellence.* Do Practice Set 6, page 315.

# MATCH YOUR BELT and TIE

Belt 55¢

Tie 39¢



## Finding the cost

Jerry and Peter added to find the cost of a belt and tie. How are their additions alike? different?

### JERRY'S ADDITION

Belt	55¢
Tie	+ 39¢
Both	<u>94¢</u>

### PETER'S ADDITION

Belt	\$ .55
Tie	+ .39
Both	<u>\$.94</u>

1. Copy without the answers. Add. See if your answers are right. Remember dollar signs and cents points.

a	b	c	d	e	f	g	h
\$ .74	\$ .35	\$ .74	\$ .60	\$ .28	\$ .16	\$ .24	\$ .35
.19	.28	.18	.28	.31	.01	.34	.33
<u>\$.93</u>	<u>\$.63</u>	<u>\$.92</u>	<u>\$.88</u>	<u>.16</u>	<u>.25</u>	<u>.14</u>	<u>.14</u>
				<u>\$.75</u>	<u>\$.42</u>	<u>\$.72</u>	<u>\$.82</u>

2. Copy, add, and check.

\$ .13	\$ .14	\$ .42	\$ .26	\$ .38	\$ .47	\$ .25	\$ .56
.22	.23	.20	.02	.21	.20	.34	.31
<u>.35</u>	<u>.36</u>	<u>.34</u>	<u>.15</u>	<u>.36</u>	<u>.13</u>	<u>.15</u>	<u>.11</u>

3.  $\$ .75 + \$ .16$

4.  $\$ .24 + \$ .37$

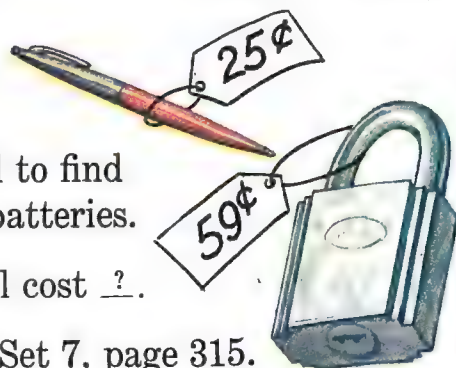
5.  $\$ .17 + \$ .06$

6. Randy is buying this lock and pen. How much will both cost?

7. A flashlight battery costs \$.23. Add to find the cost of 2 batteries; 3 batteries; 4 batteries.

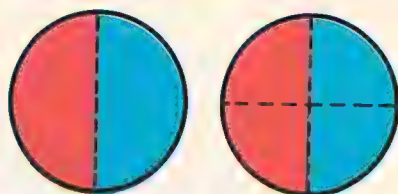
8. Two pairs of socks at \$.37 a pair will cost   ?  .

*Practice for excellence.* Do Practice Set 7, page 315.



# Halves – thirds – fourths

- Draw and cut out a circle.  
Fold it into 2 equal parts.  
Color  $\frac{1}{2}$  red. Color  $\frac{1}{2}$  blue.



Fold the circle again to make 4 equal parts.

How many halves of the circle are red? how many fourths?

- Draw and cut out a rectangle.  
Fold it into 2 equal parts.  
Color  $\frac{1}{2}$  red;  $\frac{1}{2}$  blue.

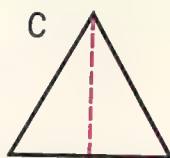
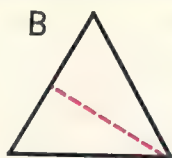
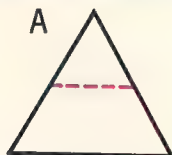


Fold it again to make 4 equal parts. Write  $\frac{1}{4}$  on each part.

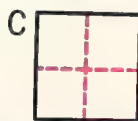
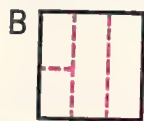
Which is larger,  $\frac{1}{4}$  of the rectangle or  $\frac{1}{2}$  of it?

Does  $\frac{1}{2}$  of the rectangle equal 2 fourths of it?

1. Which triangle below has *not* been divided into halves?



2. Which square below has *not* been divided into fourths?



3. Which rectangle below has *not* been divided into thirds?



Think twice!

Is this drinking glass  $\frac{1}{2}$  full? Explain.





*No-Cook Pudding*  
 1. Use 1 pint cold milk  
 2. Add 1 package No-Cook Pudding  
 3. Beat well.  
 4. Pour into cups. Let stand  
 5 minutes.  
 Serves 6



## Party problems OPTIONAL

There will be 24 persons at a class party. They will serve No-Cook Pudding.

1. Read how to make the pudding.
2. Can you find how many boxes of pudding they need for 24 persons? Think:
 

1 box serves 6; 2 boxes serve   ?; 3 boxes serve   ?;  
 4 boxes serve   ?.
3. 2 boxes of pudding cost 21¢; 4 boxes cost   ?.
4. How much milk will they use with 1 box of pudding?  
 2 boxes? 4 boxes?
5. One quart of milk costs 26¢; 2 quarts cost   ?.
6. The class will put the pudding in paper cups. 6 cups cost a dime. Can you find how much 24 cups cost?
7. One dozen paper spoons cost a dime. How much will 24 spoons cost?
8. Use the answers to Exercises 3, 5, 6, and 7 to find the total cost of the pudding, milk, cups, and spoons.



9. The party will last from a quarter after 2 until 5 minutes of 3. How long is that?

10. Jane brought 3 packages of balloons to blow up. There were 8 balloons in each package. How many balloons did she bring? Was that enough?

## Party Riddles

- Do you spell the second day of the week, "Toosday," "Twosday," or "Tuesday"?
- A kitten becomes a cat. A calf becomes a cow. What does an elephant become after he is 19 years old?
- What has three feet but can't walk?
- Tom added a number to 7. His answer was 7. What number did Tom add to the 7?
- Jack thought of the number 8. He subtracted a number from it. His answer was 8. What number did Jack subtract from the 8?
- Ted thought of a number. He took 6 away and had 9 left. What number did he think of?
- Mary thought of a number. She took 9 away from it and had 5 left. What was the number?
- Using three toothpicks, can you make the numeral four one way? another way?

# Changing a dime to pennies in subtraction

TRY IT

- Pick up 6 dimes. Try to give away 24¢.  
Why can't you do it?
- Change one of the 6 dimes to 10 pennies.  
You have 5 dimes and 10 pennies. Can you now give away 24¢?
- How many pennies are left? How many dimes?
- $60¢ - 24¢ = \underline{\quad}¢$ .

1. Here is another way to find  $60¢ - 24¢$ :  $\longrightarrow$

$$\begin{array}{r} \phantom{60¢} \overset{5}{\cancel{6}} \text{ dimes } \overset{10}{0} \text{ pennies} \\ 24¢ = \underline{2 \text{ dimes } 4 \text{ pennies}} \\ \phantom{60¢} 3 \text{ dimes } 6 \text{ pennies} \end{array}$$

- The 6 dimes have been changed to 5 dimes and 10 pennies.
  - Why is the 6 crossed off and the 5 written above?
  - Why is the 0 crossed off and the 10 written above?
  - What does the 3 in the answer show? the 6?
2. Use dimes and pennies to find  $70¢ - 16¢$ ;  $70¢ - 28¢$ .  
Write a subtraction to find  $70¢ - 16¢$ ;  $70¢ - 28¢$ .
3. Pick up 6 dimes and 2 pennies. Can you give away 23¢?  
Change 1 dime to 10 pennies. Then you have  $\underline{\quad}$  dimes and  $\underline{\quad}$  pennies. Give away 23¢.  $62¢ - 23¢ = \underline{\quad}$ .

4. Here is another way to find  $62¢ - 23¢$ . Explain it.  $\longrightarrow$

$$\begin{array}{r} \phantom{62¢} \overset{5}{\cancel{6}} \text{ dimes } \overset{12}{2} \text{ pennies} \\ 23¢ = \underline{2 \text{ dimes } 3 \text{ pennies}} \\ \phantom{62¢} 3 \text{ dimes } 9 \text{ pennies} \end{array}$$

5. Use coins to find  $53¢ - 17¢$ ;  $53¢ - 28¢$ .  
Write a subtraction to find  $53¢ - 17¢$ ;  $53¢ - 28¢$ .





## Changing a ten to ones in subtraction

In the Winter Sports Contest Leo threw a snowball 27 feet. Scott threw one 45 feet. To find how much farther he threw the ball than Leo, Scott subtracted.

Scott wrote the subtraction this way:  $\rightarrow$

Could he take 7 ones from 5 ones?

He changed one of the 4 tens to 10 ones.

4 tens 5 ones = 3 tens 15 ones

Then he finished the subtraction.

$$\begin{array}{r}
 \overset{3}{\cancel{4}} \text{ tens} \quad \overset{15}{\cancel{5}} \text{ ones} \\
 \hline
 2 \text{ tens} \quad 7 \text{ ones} \\
 \hline
 1 \text{ ten} \quad 8 \text{ ones} = 18
 \end{array}$$

- Why is the 4 crossed off and the 3 written above it?
- Why is the 5 crossed off and the 15 written above it?

Scott threw the snowball   ?   feet farther than Leo.

Here is a short way to subtract 27 from 45.

► Write the example like this:  $\longrightarrow$

Can you subtract 7 ones from 5 ones?

► *Change one of the 4 tens to 10 ones.*

45 becomes 3 tens, 15 ones.

► Subtract the ones.  $15 - 7 = ?$ .

► Subtract the tens.  $3 - 2 = ?$ .

$45 - 27 = ?$ . Check by adding 27 and 18.

$  \begin{array}{r}  45 \\  - 27 \\  \hline  \end{array}  $
$  \begin{array}{r}  \overset{3}{\cancel{4}} \overset{15}{\cancel{5}} \\  - 27 \\  \hline  18  \end{array}  $

*Changing a ten to ones in subtraction is often called borrowing.*

# Subtraction practice

— Tell how doing Exercises 1 through 4 will help you with Exercise 5.

*a*

1.  $50 = 4 \text{ tens } \underline{\quad} \text{ ones.}$
2.  $72 = 6 \text{ tens } \underline{\quad} \text{ ones.}$
3.  $52 = 4 \text{ tens } \underline{\quad} \text{ ones.}$
4.  $80 = 7 \text{ tens } \underline{\quad} \text{ ones.}$

*b*

- $70 = 6 \text{ tens } \underline{\quad} \text{ ones.}$
- $65 = 5 \text{ tens } \underline{\quad} \text{ ones.}$
- $45 = 3 \text{ tens } \underline{\quad} \text{ ones.}$
- $62 = 5 \text{ tens } \underline{\quad} \text{ ones.}$

— Copy, subtract, and check.

*a*

*b*

*c*

*d*

*e*

*f*

*g*

*h*

5.	$\begin{array}{r} 50 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ 37 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

6.	$\begin{array}{r} 65¢ \\ 28¢ \\ \hline \end{array}$	$\begin{array}{r} 57¢ \\ 24¢ \\ \hline \end{array}$	$\begin{array}{r} 75¢ \\ 49¢ \\ \hline \end{array}$	$\begin{array}{r} 64¢ \\ 28¢ \\ \hline \end{array}$	$\begin{array}{r} 73¢ \\ 39¢ \\ \hline \end{array}$	$\begin{array}{r} 85¢ \\ 27¢ \\ \hline \end{array}$	$\begin{array}{r} 45¢ \\ 19¢ \\ \hline \end{array}$	$\begin{array}{r} 53¢ \\ 19¢ \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

7.	$\begin{array}{r} 95 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 64 \\ \hline \end{array}$	$\begin{array}{r} 135 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ 49 \\ \hline \end{array}$	$\begin{array}{r} 91 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 69 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 55 \\ \hline \end{array}$
----	---	---	--	---	---	---	---	---

8. Two of the subtractions below are *wrong*. Find them.

$\begin{array}{r} 120 \\ 59 \\ \hline 61 \end{array}$	$\begin{array}{r} 135 \\ 49 \\ \hline 87 \end{array}$	$\begin{array}{r} 114 \\ 38 \\ \hline 76 \end{array}$	$\begin{array}{r} 133 \\ 48 \\ \hline 85 \end{array}$	$\begin{array}{r} 143 \\ 57 \\ \hline 86 \end{array}$	$\begin{array}{r} 95 \\ 77 \\ \hline 28 \end{array}$	$\begin{array}{r} 155 \\ 86 \\ \hline 69 \end{array}$	$\begin{array}{r} 75 \\ 36 \\ \hline 39 \end{array}$
---	---	---	---	---	--	---	--

— Find the missing numbers.

9.  $48 + \bigcirc = 75$

10.  $132 - \triangle = 68$

*Practice for excellence.* Do Practice Set 29 on page 321.

# Subtracting money

1. Lucy has 38¢. She wants to buy sunglasses that cost 65¢. To find out how much more money she needs, she and Polly subtracted 38¢ from 65¢.

How are their subtractions alike? different?

LUCY'S SUBTRACTION

$$\begin{array}{r} 65\text{¢} \\ - 38\text{¢} \\ \hline 27\text{¢} \end{array}$$

POLLY'S SUBTRACTION

$$\begin{array}{r} \$65 \\ - .38 \\ \hline \$27 \end{array}$$



2. One of the subtractions below is *wrong*. Copy it and subtract correctly.

a	b	c	d	e	f	g
\$ .75	\$ .34	\$ .55	\$ .63	\$ .45	\$ .77	\$ .82
<u>.27</u>	<u>.19</u>	<u>.38</u>	<u>.47</u>	<u>.39</u>	<u>.53</u>	<u>.63</u>
\$ .48	\$ .15	\$ .17	\$ .16	\$ .04	\$ .24	\$ .19

— Copy, subtract, and check.

3. \$ .63	\$ .75	\$ .70	\$ .45	\$ .94	\$ .68	\$ .56
<u>.28</u>	<u>.28</u>	<u>.65</u>	<u>.29</u>	<u>.48</u>	<u>.20</u>	<u>.28</u>
4. \$ .65	\$ .97	\$ .74	\$ .80	\$ .85	\$ .54	\$ .42
<u>.27</u>	<u>.34</u>	<u>.27</u>	<u>.32</u>	<u>.39</u>	<u>.38</u>	<u>.22</u>
5. \$ .84	\$ .78	\$ .43	\$ .63	\$ .90	\$ .54	\$ .32
<u>.45</u>	<u>.25</u>	<u>.29</u>	<u>.35</u>	<u>.54</u>	<u>.19</u>	<u>.15</u>

6. \$ .75 - \$ .29

7. \$ .63 - \$ .48

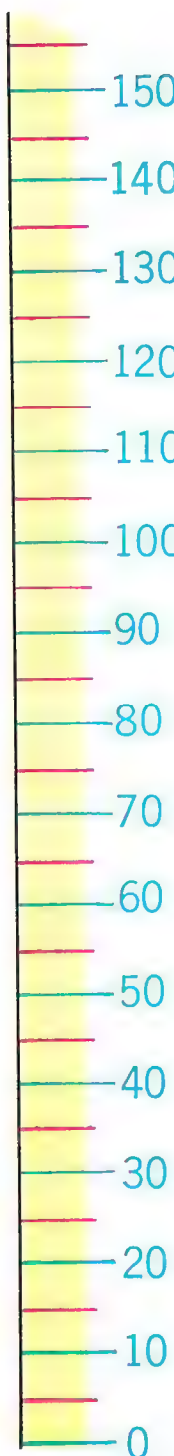
8. \$ .80 - \$ .45

9. Fred has \$.60. How much will he have left if he spends \$.25 for a magnet? \$.39 for fishhooks?

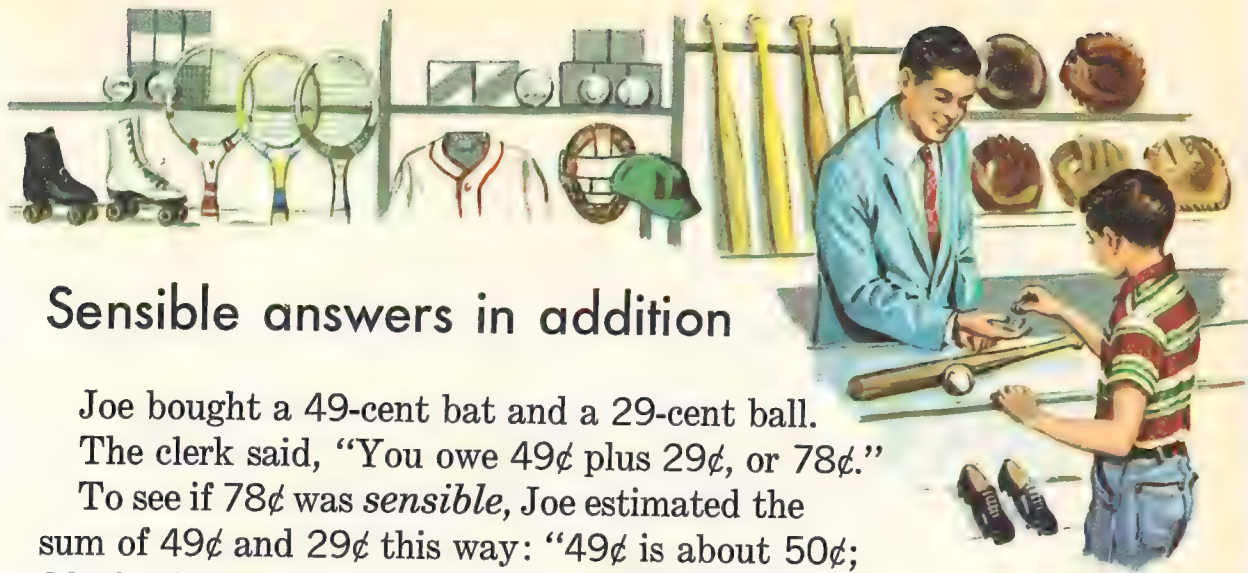
*Practice for excellence.* Do Practice Set 30, page 321.



## The nearest ten

- 
1. What color is the mark halfway between 0 and 10? What number does it stand for?
  2. What number is halfway between:
 

20 and 30	40 and 50	60 and 70
100 and 110	110 and 120	120 and 130
  3. About where is 52 on the line? It comes between 50 and 60. Is it nearer to 50 or 60?
  4. Find 78 on the line. Is it nearer to 70 or 80?
  5. Tell which blue number each of these is nearest to.  
21      58      67      88      107      123
  6. Is  $21 + 48$  closer to 60 or 70?  
Think: 21 is close to 20; 48 is close to 50;  
 $21 + 48$  is close to  $20 + 50$ , or 70.
  7. Is  $37 + 51$  closer to 80 or 90?  
Think: 37 is close to 40; 51 is close to 50;  
 $37 + 51$  is close to  $40 + 50$ , or 90.
  8. Is  $61 + 22$  closer to 80 or 90?  
Think: 61 is close to 60; 22 is close to 20;  
 $61 + 22$  is close to  $60 + 20$ , or 80.
  9. Is  $41 + 28$  closer to 60 or 70? Explain.
  10. Is  $99 + 19$  closer to 110 or 120? Explain.
  11. Is  $37¢ + 52¢$  closer to 80¢ or 90¢? Explain.
  12. Is  $\$.82 + \$.36$  closer to \$1.10 or \$1.20? Explain.



## Sensible answers in addition

Joe bought a 49-cent bat and a 29-cent ball.

The clerk said, "You owe 49¢ plus 29¢, or 78¢."

To see if 78¢ was *sensible*, Joe estimated the sum of 49¢ and 29¢ this way: "49¢ is about 50¢; 29¢ is about 30¢. 50¢ plus 30¢ is 80¢."

Does Joe's estimate show that 78¢ is a sensible answer to 49¢ plus 29¢?

— There are three answers given for Exercises 1 through 4. Pick the one that is sensible. In Exercise 1 say: "39 is almost 40; 22 is about 20. The sum should be about  $40 + 20$ , or 60. So 61 is a sensible answer."

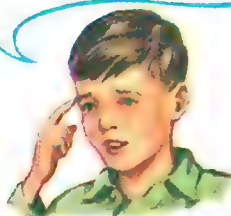
1. Does  $39 + 22 = 52$  or 61 or 73?
2. Does  $28 + 63 = 71$  or 81 or 91?
3. Does  $32 + 50 + 48 = 110$  or 120 or 130?
4. Does  $43 + 39 + 60 = 132$  or 142 or 152?

*A wise boy  
Is Joseph Bates.  
When he adds  
He estimates!*

— Do these additions. Check each answer by estimating.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
5. $26 + 38$	$39 + 42$	$37 + 54$	$34 + 12 + 9$
6. $45 + 29$	$28 + 73$	$49 + 13$	$48 + 10 + 12$
7. $48 + 46$	$18 + 67$	$88 + 23$	$67 + 10 + 38$

I have about 70¢.  
If I spend about 50¢,  
I'll have left about 20¢.



## Sensible answers in subtraction

Bill had 72 cents. He wanted to buy a knife for 49 cents. He estimated how much he would have left. Then he subtracted.

He found he would have  $\underline{\quad}¢$  left.

Is 23¢ a *sensible answer*? How do you know?

$$\begin{array}{r} 72¢ \\ - 49¢ \\ \hline 23¢ \end{array}$$

— Estimate the answers. In Exercise 1 say: “71 is about 70; 48 is about 50; so the answer is about  $\underline{\quad}$ .”

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. $71 - 48$	$71 - 22$	$70 - 48$	$100 - 47$
2. $83 - 39$	$89 - 51$	$79 - 38$	$100 - 26$
3. $92 - 61$	$90 - 21$	$91 - 32$	$100 - 78$
4. $58 - 31$	$98 - 69$	$69 - 21$	$100 - 89$
5. $61 - 39$	$100 - 22$	$120 - 19$	$120 - 89$
6. $72 - 43$	$100 - 39$	$140 - 39$	$130 - 21$
7. $83 - 54$	$100 - 52$	$150 - 98$	$171 - 29$
8. $94 - 58$	$100 - 69$	$160 - 79$	$189 - 48$

9. John now has \$19.80. He wants a radio that costs \$30.00. Estimate how much more he must save.

10. Mary wants to buy a used bicycle for \$21.00. She has saved \$10.85. Estimate how much more she must save to buy the bicycle.

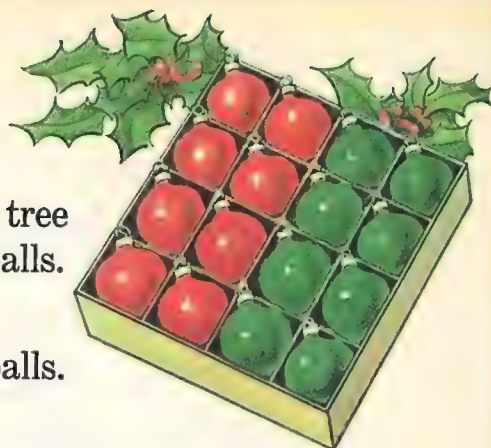
11. Carl has \$9.95. Estimate how much he will have left if he buys skates for \$3.98.

12. Tim got \$5.00 for his birthday. Estimate how much he will have left if he spends \$2.95 for a cowboy shirt.





# Facts about 16



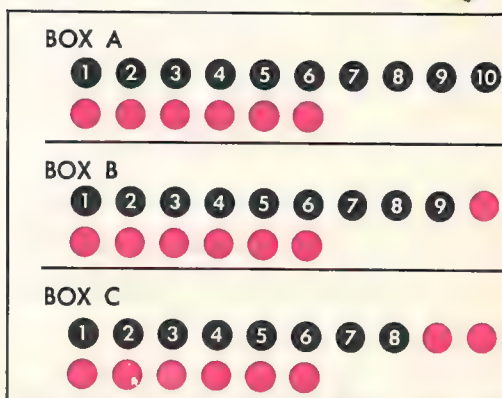
1. Beth bought this box of Christmas tree balls. There are   ? red balls and   ? green balls. There are   ? balls in all.

2. Beth has 9 hooks to hang the 16 balls. She needs   ? more hooks.

3. Beth hung 7 of the 16 balls on a wreath. She hung the other   ? balls on a tree.

4. Box A shows:  $10 + 6 = 16$ . What addition and subtraction facts do Boxes B and C show?

Make a problem for each.



5.  $8 + 7 = 15$ , so  $8 + 8 = \underline{\quad ? \quad}$ .

6.  $16 - 10 = 6$ , so  $16 - 9 = \underline{\quad ? \quad}$ .

7.  $8 + 8 = 16$ , so  $16 - 8 = \underline{\quad ? \quad}$ .

8.  $10 + 7 = 17$ , so  $9 + 7 = \underline{\quad ? \quad}$ .

9.  $7 + 9 = 16$ , so  $9 + 7 = \underline{\quad ? \quad}$ .

10.  $9 + 6 = 15$ , so  $9 + 7 = \underline{\quad ? \quad}$ .

11.  $7 + 7 = 14$ , so  $9 + 7 = \underline{\quad ? \quad}$ .

12. Cover the answers below. Say each answer.

$$\begin{array}{r} 9 \\ + 7 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 7 \\ + 9 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 16 \\ - 9 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 16 \\ - 7 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 8 \\ + 8 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 16 \\ - 8 \\ \hline 8 \end{array}$$

Think twice!

— Many different pairs of numbers may be used for each example below. Name five pairs for each.

$$\triangle ? + \square ? = 83$$

$$\square ? - \bigcirc ? = 96$$

## Using facts of 16

1. Don has two strings of Christmas tree lights. There are 8 lights on each string. That is   ?   lights.

2. Billy bought 16 Christmas tree balls. He dropped the box. All but 7 balls broke. How many broke?

3. Jane had 16 Christmas tree stars. 9 were gold. The other   ?   stars were silver.

4. Patsy made 9 nut cookies and 7 sugar cookies. That was   ?   cookies in all.

5. Jane has a nickel and 2 pennies, or   ?  ¢.

Nancy has a nickel and 4 pennies, or   ?  ¢. Together they have   ?   nickels and   ?   pennies, or   ?  ¢.

$$7¢ + 9¢ = \text{?}¢$$

6. Tom had 16¢. He spent 9¢. He had   ?  ¢ left.

— How quickly can you tell the answers in Exercises 7 through 10.

7. $\begin{cases} 16 - 9 \\ 16 - 7 \\ 16 - 8 \end{cases}$	8. $\begin{cases} 7 + 9 \\ 8 + 8 \\ 9 + 7 \end{cases}$	9. $\begin{cases} 9 + 7 \\ 15 - 7 \\ 8 + 8 \end{cases}$	10. $\begin{cases} 8 + 8 \\ 7 + 9 \\ 16 - 7 \end{cases}$
---	--	---	--

11. Practice until you can say every answer correctly.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
16	8	16	9	7	16	6	9
<u>-7</u>	<u>+8</u>	<u>-9</u>	<u>+5</u>	<u>+9</u>	<u>-8</u>	<u>+7</u>	<u>+7</u>

12. Write the answers to Exercise 11 on folded paper.

Make and study Help-Yourself Cards for any facts you do not know.

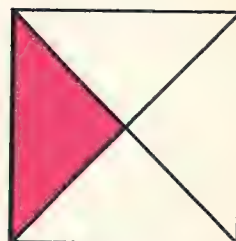
$$\begin{array}{r} 16 \\ -9 \\ \hline \end{array}$$

KNOW YOUR FACTS Do Exercise 8 on page 100.

# Keeping up in arithmetic

## Oral

1. 5 hundreds + 7 tens + 4 ones = ?.
2. Count by 2's to 20; by 5's to 50; by 3's to 30.
3. What part of this square has been colored?  $\longrightarrow$
4. Does the tenth of this month come on Monday?
5. 87 is ? tens and ? ones;  $90 =$  ? tens ? ones.
6. 5 dimes and 14 pennies = ? dimes and 4 pennies.
7. 7 dimes and 3 pennies = 6 dimes and ? pennies.
8. 9 tens and 5 ones = 8 tens and ? ones.
9.  $75 =$  6 tens and ? ones;  $83 =$  7 tens ? ones.
10. 1 yd. = ? ft.; 1 yd. = ? in.; 1 ft. = ? in.; 1 hr. = ? min.
11. Which is more, IX or 10? VIII or  $(3 + 4)$ ? IV or  $(10 - 4)$ ?
12. Does  $59 + 31$  equal about 80, 90, or 100?
13. 9 tens = ?      10 tens = ?      11 tens = ?      12 tens = ?



## Written

— Check your answers to these examples.

1.  $3 + 2 + 7$
2.  $6 + 3 + 5$
3.  $8 + 1 + 5$
4. 
$$\begin{array}{r} 75 \\ + 64 \\ \hline \end{array}$$
5. 
$$\begin{array}{r} 93 \\ + 58 \\ \hline \end{array}$$
6. 
$$\begin{array}{r} 159 \\ - 63 \\ \hline \end{array}$$
7. 
$$\begin{array}{r} 95 \\ - 28 \\ \hline \end{array}$$
8. 
$$\begin{array}{r} 134 \\ - 76 \\ \hline \end{array}$$
9. Write sixty dollars and six cents in figures.
10. The temperature is  $52^{\circ}$ . If it gets  $10^{\circ}$  cooler, what will the temperature be?



# Problems and practice

1. How much will a quart of this ice cream cost?
2. Find the total cost of a doll at \$.79 and a doll dress at \$.25.
3. Tom has sold 33 skating pond tickets. Lucy has sold 18. How many more tickets must Lucy sell to catch up with Tom?
4. Jean has 89¢. If she spends 25¢ to go to the movies, she will have   ?  ¢ left.
5. Yesterday Bob knew 79 addition facts. Today he knows 86. He knows   ?   more today than yesterday.
6. 1 year =   ?   months. Do an addition to show how many months there are in three years.



## Practice for speed and accuracy

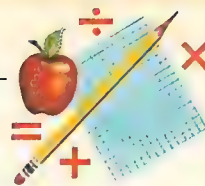
— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
7.	8	2	4	3	3	3	4	5
	0	5	4	3	4	4	2	1
	<u>8</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>8</u>	<u>9</u>	<u>8</u>	<u>9</u>
8.	25	52	38	54	39	29	43	67
	<u>86</u>	<u>49</u>	<u>83</u>	<u>60</u>	<u>76</u>	<u>77</u>	<u>25</u>	<u>29</u>

— Copy, subtract, and check.

9.	85	156	85	49	168	139	45	123
	<u>38</u>	<u>69</u>	<u>78</u>	<u>47</u>	<u>95</u>	<u>76</u>	<u>28</u>	<u>29</u>

# SELF-HELP TEST 3



— Copy, add, and check.

1. 
$$\begin{array}{r} 64 \\ + 35 \\ \hline \end{array}$$
 [67]

2. 
$$\begin{array}{r} 76 \\ + 82 \\ \hline \end{array}$$
 [87]

3. 
$$\begin{array}{r} \$ .23 \\ + .69 \\ \hline \end{array}$$
 [106]

— Copy, subtract, and check.

4. 
$$\begin{array}{r} 87 \\ - 53 \\ \hline \end{array}$$
 [69]

5. 
$$\begin{array}{r} 148 \\ - 56 \\ \hline \end{array}$$
 [88]

6. 
$$\begin{array}{r} \$ .91 \\ - .28 \\ \hline \end{array}$$
 [113]

7.  $3 + 5 + 4 = ?$  [21]

8.  $130 = ?$  tens [85]

9.  $572 = ?$  hundreds  $?$  tens  $?$  ones. [83]

10. Is  $62 + 79$  about 130, or about 140? [115]

# SELF-HELP TEST 4



1. Which is longer, 2 feet or 1 yard? [45]

2. Write in figures: six dollars and fifty-four cents. [91]

3. Copy these in order. Begin with III.

VIII V III VI IV VII IX [58]

4. How much change will you receive from a half dollar when you spend 34¢? [56]

5. What part of this rectangle is white? [55]



6. Which is more, 5 quarts or 1 gallon? [47]

7. Find the number of ounces in two pounds. [48]

8. Can you pour water when it has a temperature of 28°? [50]

9. How do you find the difference between two numbers? [36]

10. What is the other number? →

ONE NUMBER	OTHER NUMBER	SUM
35	?	90

[24]

# IT'S CHECK-UP TIME

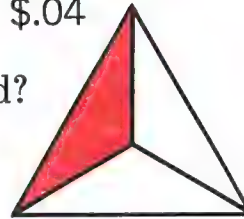


1. Add and check.  $48¢$   
 $\underline{38¢}$

2. Subtract and check.  $65$   
 $\underline{- 28}$

3. Find the sum.  $\$.23 + \$.45 + \$.04$

4. What part of this triangle is red?  
 Write your answer in figures.



5.  $74 = 6 \text{ tens } \underline{\quad} \text{ ones.}$

6. Do you estimate the sum of 88 and 69 to be about 140, or 150, or 160?

7. The temperature fell from  $82^\circ$  to  $65^\circ$ . It fell  $\underline{\quad}^\circ$ .

8. There are 36 inches in a yard. Do an addition to find how many inches there are in 2 yards.

9. Ted had \$.96. He spent \$.27. He had  $\underline{\quad}$  left.

10. Jim thought of a number. He took away 68 and had 27 left. What number did he think of?

**If you have time, try these -**

11.  $9 + 7 = 16$ , so  $239 + 7 = \underline{\quad}$ .

12. What number does N stand for in this example?  
 $22 + N + 35 + 10 = 95$



J U S T F O R F U N

Joe did an addition and found the sum to be 5,903. The 9 should have been an 8. How much of a mistake did he make?



# Using the number line

1. Point to the marks for the numbers with 5 in ones place; with 0; 3; 4; 6. Say the numbers.

2. Add 5 and 3 on the number line. Begin at 5. Count up 3 more. You stop at ?.

$$5 + 3 = \underline{\quad} \quad 15 + 3 = \underline{\quad} \quad 25 + 3 = \underline{\quad}$$

3. Begin at 8. Count up 2 more. You stop at ?.

$$8 + 2 = \underline{\quad} \quad 18 + 2 = \underline{\quad} \quad 28 + 2 = \underline{\quad}$$

4. Begin at 7 and count up 5; count up 6.

$$\begin{array}{lll} 17 + 5 = \underline{\quad} & 27 + 5 = \underline{\quad} & 37 + 5 = \underline{\quad} \\ 17 + 6 = \underline{\quad} & 27 + 6 = \underline{\quad} & 37 + 6 = \underline{\quad} \end{array}$$

5. Use the number line to do these additions.

$$\begin{array}{lll} 38 + 2 = \underline{\quad} & 47 + 5 = \underline{\quad} & 27 + 6 = \underline{\quad} \\ 28 + 2 = \underline{\quad} & 27 + 5 = \underline{\quad} & 47 + 6 = \underline{\quad} \\ 48 + 2 = \underline{\quad} & 37 + 5 = \underline{\quad} & 37 + 6 = \underline{\quad} \end{array}$$

6. Subtract 5 from 9 on the number line. Begin at 9. Count down 5. You stop at ?.

$$9 - 5 = \underline{\quad} \quad 19 - 5 = \underline{\quad} \quad 29 - 5 = \underline{\quad}$$

7. Begin at 10. Count down 3. You stop at ?.

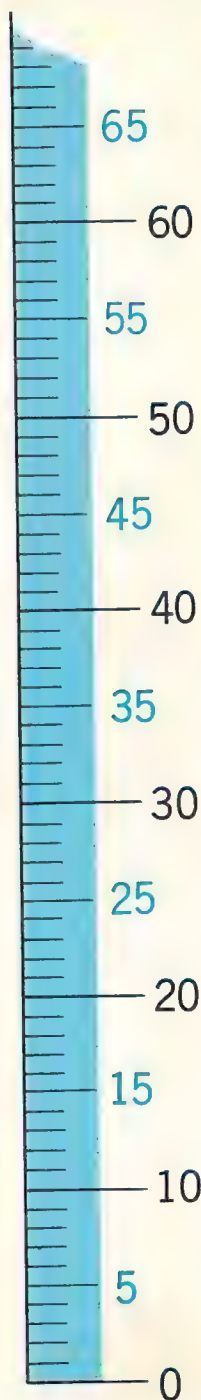
$$10 - 3 = \underline{\quad} \quad 20 - 3 = \underline{\quad} \quad 40 - 3 = \underline{\quad}$$

8. Begin at 13 and count down 4; count down 5.

$$\begin{array}{lll} 13 - 4 = \underline{\quad} & 23 - 4 = \underline{\quad} & 33 - 4 = \underline{\quad} \\ 13 - 5 = \underline{\quad} & 23 - 5 = \underline{\quad} & 33 - 5 = \underline{\quad} \end{array}$$

9. Use the number line to do these subtractions.

$$\begin{array}{lll} 40 - 3 = \underline{\quad} & 33 - 4 = \underline{\quad} & 23 - 5 = \underline{\quad} \\ 30 - 3 = \underline{\quad} & 43 - 4 = \underline{\quad} & 53 - 5 = \underline{\quad} \\ 50 - 3 = \underline{\quad} & 53 - 4 = \underline{\quad} & 43 - 5 = \underline{\quad} \end{array}$$



## Key facts in addition

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1. Use the chart to find  $5 + 3$ . Point to 5; count 3 more. You stop at   ?. Find  $15 + 3$ ;  $25 + 3$ ;  $35 + 3$ . If 3 is added to a number ending in 5, the sum ends in   ?.

2. Use the chart to find  $4 + 2$ ;  $14 + 2$ ;  $24 + 2$ ;  $34 + 2$ . If 2 is added to a number ending in 4, the sum ends in   ?.

3. Find the sums.

$3 + 4$	$4 + 5$	$5 + 3$
$13 + 4$	$14 + 5$	$15 + 3$
$23 + 4$	$24 + 5$	$25 + 3$
$33 + 4$	$34 + 5$	$35 + 3$

5. Add. Tell the *key facts*.

74	57	26	34
<u>  3  </u>	<u>  2  </u>	<u>  3  </u>	<u>  5  </u>

— Add 1 to each number below.  
Add 2; 3; 4; 5.

4. In each column of Exercise 3, the first example is called a *key fact*. Why?

6. 84	11	91	50
7. 42	73	21	13

*Practice for excellence.* Do Practice Set 8, page 315.

## More key facts in addition

1. To add 12 and 8 on the chart on page 124, put your finger on 12, then count 8 more. That brings you to 20.

$$12 + 8 = 20. \quad 22 + 8 = \underline{\quad ? \quad} \quad 32 + 8 = \underline{\quad ? \quad} \quad 42 + 8 = \underline{\quad ? \quad}$$

If 8 is added to a number ending in 2, the sum ends in  $\underline{\quad ? \quad}$ .

— Use the chart to find the sums.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
2. $6 + 4$	$16 + 4$	$26 + 4$	$36 + 4$	$46 + 4$
3. $7 + 3$	$17 + 3$	$27 + 3$	$37 + 3$	$47 + 3$
4. $5 + 5$	$15 + 5$	$25 + 5$	$35 + 5$	$45 + 5$

5. What is the key fact in Exercise 2? Exercise 3? 4?

6.  $6 + 4 = 10$ , so  $6 + 5 = \underline{\quad ? \quad}$ .     $16 + 4 = 20$ , so  $16 + 5 = \underline{\quad ? \quad}$ .

7.  $7 + 3 = 10$ , so  $7 + 5 = \underline{\quad ? \quad}$ .     $27 + 3 = 30$ , so  $27 + 5 = \underline{\quad ? \quad}$ .

8.  $5 + 5 = 10$ , so  $5 + 8 = \underline{\quad ? \quad}$ .     $35 + 5 = 40$ , so  $35 + 8 = \underline{\quad ? \quad}$ .

— Find the sums. Check your answers on the chart.

9. $8 + 5$	$18 + 5$	$28 + 5$	$38 + 5$	$48 + 5$
10. $9 + 5$	$19 + 5$	$29 + 5$	$39 + 5$	$49 + 5$
11. $6 + 8$	$16 + 8$	$26 + 8$	$36 + 8$	$46 + 8$

12. What is the key fact in Exercise 9? Exercise 10? 11?

13.  $8 + 3 = 11$ , so  $18 + 3 = \underline{\quad ? \quad}$ .     $28 + 3 = \underline{\quad ? \quad}$      $38 + 3 = \underline{\quad ? \quad}$

14.  $7 + 5 = 12$ , so  $17 + 5 = \underline{\quad ? \quad}$ .     $27 + 5 = \underline{\quad ? \quad}$      $47 + 5 = \underline{\quad ? \quad}$

15.  $9 + 7 = 16$ , so  $19 + 7 = \underline{\quad ? \quad}$ .     $29 + 7 = \underline{\quad ? \quad}$      $39 + 7 = \underline{\quad ? \quad}$

*Practice for excellence.* Do Practice Set 9, page 316.



## Oral practice in adding

1. Why is  $5 + 7 = 12$  called the key fact in these additions?

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
$\begin{array}{r} 5 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ + 7 \\ \hline \end{array}$

— Add. Tell the key facts.

2.  $\begin{array}{r} 6 \\ + 5 \\ \hline \end{array}$      $\begin{array}{r} 16 \\ + 5 \\ \hline \end{array}$      $\begin{array}{r} 26 \\ + 5 \\ \hline \end{array}$      $\begin{array}{r} 36 \\ + 5 \\ \hline \end{array}$

3.  $\begin{array}{r} 6 \\ + 7 \\ \hline \end{array}$      $\begin{array}{r} 16 \\ + 7 \\ \hline \end{array}$      $\begin{array}{r} 26 \\ + 7 \\ \hline \end{array}$      $\begin{array}{r} 36 \\ + 7 \\ \hline \end{array}$

4.  $\begin{array}{r} 9 \\ + 4 \\ \hline \end{array}$      $\begin{array}{r} 19 \\ + 4 \\ \hline \end{array}$      $\begin{array}{r} 29 \\ + 4 \\ \hline \end{array}$      $\begin{array}{r} 39 \\ + 4 \\ \hline \end{array}$

— Find these sums. Say: “5 and 8 are 13, so 15 and 8 are 23 and so on.”

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
$\begin{array}{r} 15 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ + 7 \\ \hline \end{array}$

6.  $\begin{array}{r} 16 \\ + 8 \\ \hline \end{array}$      $\begin{array}{r} 23 \\ + 7 \\ \hline \end{array}$      $\begin{array}{r} 35 \\ + 9 \\ \hline \end{array}$      $\begin{array}{r} 23 \\ + 9 \\ \hline \end{array}$

<i>a</i>	<i>b</i>	<i>c</i>
7. $15 + 7$	$28 + 4$	$16 + 4$

8.  $12 + 8$      $26 + 8$      $25 + 8$

9.  $17 + 6$      $38 + 5$      $33 + 7$

10.  $18 + 5$      $33 + 9$      $17 + 4$

11.  $15 + 9$      $23 + 8$      $24 + 9$

— Add 4 to each number below. Add 5; 6; 7; 8; 9.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
12. 15	25	35	45	57	65	77	85

13. 86	57	16	77	47	26	96	67
--------	----	----	----	----	----	----	----

— Tell what you think as you add down. Check by adding up.

14. 5	7	6	7	9	7	4	6
6	7	8	6	5	5	6	7
8	4	5	2	7	8	8	6

### Practice for excellence

Do Practice Sets 10 and 11, page 316.

# Adding longer columns

— How will Exercise 1 help you do Exercise 2?

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	14 <u>+ 7</u>	16 <u>+ 7</u>	15 <u>+ 5</u>	9 <u>+ 6</u>	12 <u>+ 4</u>	10 <u>+ 6</u>	15 <u>+ 8</u>
2.	17 27 <u>+ 37</u>	38 28 <u>+ 27</u>	18 17 <u>+ 35</u>	24 35 <u>+ 16</u>	17 25 <u>+ 44</u>	23 7 <u>+ 16</u>	59 16 <u>+ 8</u>

3. Find the addition with the *wrong* answer. Copy that addition and add correctly.

51 26 <u>84</u> 161	34 40 <u>19</u> 93	83 9 <u>25</u> 117	8 98 <u>35</u> 141	26 48 <u>7</u> 81	56 47 <u>18</u> 131	75 8 <u>28</u> 111
------------------------------	-----------------------------	-----------------------------	-----------------------------	----------------------------	------------------------------	-----------------------------

— Add and check.

4.	38 26 <u>15</u>	25 36 <u>24</u>	56 8 <u>87</u>	27 35 <u>6</u>	63 8 <u>68</u>	75 24 <u>7</u>	60 28 <u>47</u>
5.	26 39 <u>17</u>	34 17 <u>18</u>	27 9 <u>96</u>	9 45 <u>38</u>	37 8 <u>46</u>	68 30 <u>56</u>	27 26 <u>93</u>

6.  $16 + 38 + 64 = ?$  7.  $78 + 8 + 36 = ?$  8.  $45 + 38 + 6 = ?$

Think twice!

Allen needs an iron rod 2 feet 8 inches long. He can buy rods of these lengths: 28 inches; 30 inches; 32 inches. Which rod should he buy?

*Practice for excellence.* Do Practice 12, page 316.

## Problems and practice

1. Peter had 40 chickens. Now he has only 26. He sold the others. How many did he sell?
2. Miss Bell's class plans to set out 42 pansy plants. They have 18 plants. They need   ? more plants.
3. Mary jumped rope 41 times without missing. Susan jumped 29 times. Mary jumped   ? times more than Susan.
4. Betty weighs 52 pounds. How many pounds do Betty and Susan together weigh?  $\longrightarrow$
5. Dick has 63¢. How much will he have left if he buys a 25-cent book? a 39-cent knife?
6. Linda has a quarter, 2 dimes, and 4 pennies. How much does she have all together?



### Practice for speed and accuracy

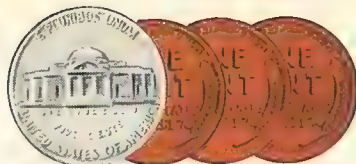
— In which of the subtractions below do you need to change 1 ten to 10 ones? Copy the examples. Subtract, and check.

- |    | <i>a</i>   | <i>b</i>   | <i>c</i>  | <i>d</i>   | <i>e</i>   | <i>f</i>   | <i>g</i>   | <i>h</i>  |
|----|--|--|---|--|--|--|--|---|
| 7. | $\begin{array}{r} 50 \\ 29 \\ \hline \end{array}$  | $\begin{array}{r} 84 \\ 37 \\ \hline \end{array}$  | $\begin{array}{r} 99 \\ 63 \\ \hline \end{array}$ | $\begin{array}{r} 77 \\ 25 \\ \hline \end{array}$  | $\begin{array}{r} 81 \\ 27 \\ \hline \end{array}$  | $\begin{array}{r} 122 \\ 48 \\ \hline \end{array}$ | $\begin{array}{r} 145 \\ 79 \\ \hline \end{array}$ | $\begin{array}{r} 65 \\ 32 \\ \hline \end{array}$ |
| 8. | $\begin{array}{r} 115 \\ 28 \\ \hline \end{array}$ | $\begin{array}{r} 132 \\ 49 \\ \hline \end{array}$ | $\begin{array}{r} 91 \\ 68 \\ \hline \end{array}$ | $\begin{array}{r} 120 \\ 38 \\ \hline \end{array}$ | $\begin{array}{r} 135 \\ 59 \\ \hline \end{array}$ | $\begin{array}{r} 54 \\ 37 \\ \hline \end{array}$  | $\begin{array}{r} 84 \\ 49 \\ \hline \end{array}$  | $\begin{array}{r} 38 \\ 15 \\ \hline \end{array}$ |
| 9. | 64 - 27  | 10.  | 92 - 48   | 11.  | 48 - 25  | 12.  | 76 - 27  |   |



# Facts about 17

1. Jane has a nickel and 3 pennies, or ?¢.



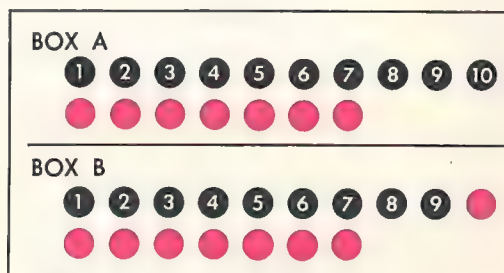
Jack has a nickel and 4 pennies, or ?¢.

Together they have ? nickels and ? pennies, or ?¢.  $8¢ + 9¢ = ?¢$ .



2. Can two children share 17¢ equally? What is the best they can do?

3. Box A shows that  $10 + 7 = ?$ .



4. What addition and subtraction facts does Box B show? Make a problem for each.

*a*

*b*

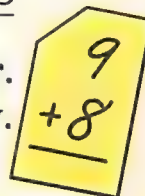
5.  $8 + 8 = 16$ , so  $8 + 9 = ?$ .  $16 - 8 = 8$ , so  $17 - 8 = ?$ .  
 6.  $10 + 8 = 18$ , so  $9 + 8 = ?$ .  $17 - 8 = 9$ , so  $17 - 9 = ?$ .  
 7.  $9 + 7 = 16$ , so  $9 + 8 = ?$ .  $17 - 10 = 7$ , so  $17 - 9 = ?$ .  
 8.  $9 + 8 = 17$ , so  $8 + 9 = ?$ .  $9 + 8 = 17$ , so  $17 - 9 = ?$ .  
 9. Cover the answers below. Say each answer.

$9 + 8 = 17$	$8 + 9 = 17$		$17 - 8 = 9$	$17 - 9 = 8$
--------------	--------------	--	--------------	--------------

— Practice until you can say every answer correctly.

10.	9	17	14	8	15	13	8	17
	$+ 8$	$- 9$	$- 6$	$+ 8$	$- 9$	$- 4$	$+ 9$	$- 8$

11. Write the answers to Exercise 10 on folded paper. Make Help-Yourself Cards for any facts you do not know. Then write the answers again.





## Using facts about 17

1. There were 9 black horses and 8 white horses leading the Rodeo parade. That was ? horses.
2. There were 17 bands in the parade. Nine bands marched. The other ? bands rode.
3. 80 girls and 92 boys marched in the parade. That was ? children.
4. 178 cowboys and 85 cowgirls were in the Rodeo. There were ? more cowboys than cowgirls.

5. Which of these could you give to pay for a 17-cent flag?

- 1 dime 7 pennies
- 2 nickels 7 pennies
- 17 pennies
- 3 nickels 2 pennies
- 1 nickel 12 pennies
- 1 dime 1 nickel 2 pennies

— What number does N stand for in each of these?

- | <i>a</i>        | <i>b</i>      | <i>c</i>     |
|-----------------|---------------|--------------|
| 6. $N + 7 = 17$ | $9 + N = 17$  | $N + 8 = 17$ |
| 7. $17 - N = 8$ | $17 - N = 10$ | $17 - N = 9$ |

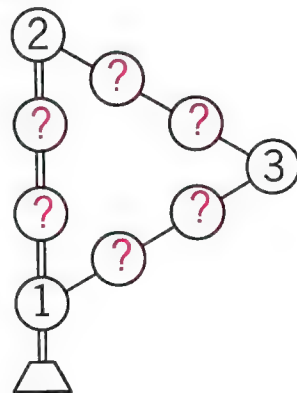
— Many different pairs of numbers may be used for each example below. Name five pairs for each.

8.  $\triangle + \bigcirc = 17$

9.  $\bigcirc + \triangle = 16$

Think twice!

— Copy this number flag. Then write 4, 5, 6, 7, 8, 9 on the empty circles so that the sum for each side of the flag is 17.



# Problems to solve

1. Kathy had 75¢. She spent 39¢ for her mother's Christmas present. Then she had   ?  ¢ left.

2. On December 11, Toby said, "Two weeks from today will be Christmas." Show that he was right.

3. Nancy bought two chains of beads for the Christmas tree. One chain had 75 beads. The other had 50 beads. In all she bought   ?   beads.

4. Paul bought four sheets of gift-wrap paper at 10¢ a sheet. He spent   ?  ¢.

5. Jane had two sheets of 100 Christmas seals each, three rows of 10 seals each, and 7 more seals. In all she had   ?   seals.

6. Tom spent 45¢ for his mother's present and 39¢ for his father's. For both he spent   ?  ¢.

7. Jane sent 16 Christmas cards. She made 9 of them, and bought the others. She bought   ?   cards.

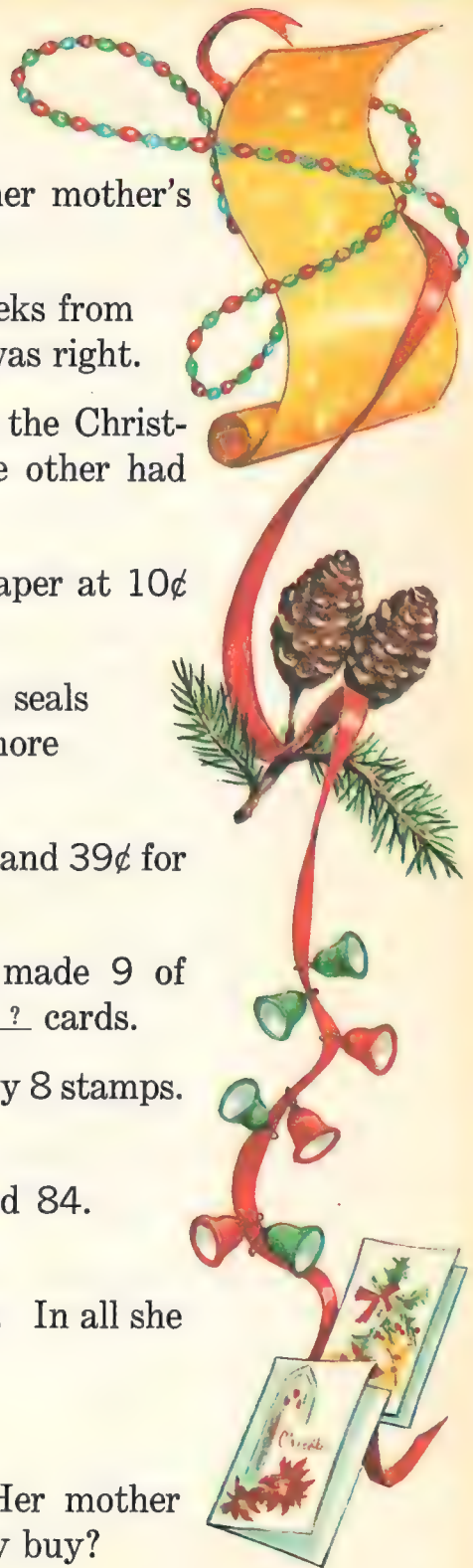
8. Dan has 15 cards to send, but he has only 8 stamps. He needs   ?   more stamps.

9. Molly had 56 pine cones and Jack had 84. Together they had   ?   cones.

10. Sue made 14 red bells and 9 green bells. In all she made   ?   bells.

Think twice!

Carol will send 18 Christmas cards. Her mother will send 59. How many stamps must they buy?





# Facts about 18



1. How many baseball players are needed for a team? For a game,   ?   teams are needed.

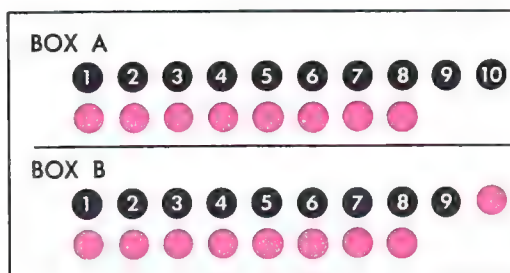


2. How many players are needed for a game?

$$9 + 9 = \underline{\quad ? \quad}$$

3. Box A shows  $10 + 8 = \underline{\quad ? \quad}$ .

4. What addition fact does Box B show? What subtraction fact? Make a problem for each.



5.  $8 + 9 = 17$ , so  $9 + 9 = \underline{\quad ? \quad}$ .      7.  $9 + 9 = 18$ , so  $18 - 9 = \underline{\quad ? \quad}$ .

6.  $17 - 9 = 8$ , so  $18 - 9 = \underline{\quad ? \quad}$ .      8.  $10 + 9 = 19$ , so  $9 + 9 = \underline{\quad ? \quad}$ .

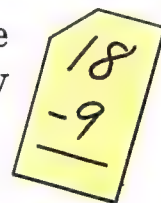
$$9 + 9 = 18$$

$$18 - 9 = 9$$

— Practice until you can say every answer correctly.

9.	15	9	16	9	17	7	18	15
	<u>- 9</u>	<u>+ 8</u>	<u>- 8</u>	<u>+ 9</u>	<u>- 9</u>	<u>+ 8</u>	<u>- 9</u>	<u>- 6</u>

10. Write the answers to Exercise 9 on folded paper. Make Help-Yourself Cards for any facts you do not know. Study your cards. Then write the answers again.



*Practice for speed and accuracy*

1.	54	98	93	96	89	75	47
	<u>+ 63</u>	<u>+ 87</u>	<u>+ 62</u>	<u>+ 93</u>	<u>+ 64</u>	<u>+ 98</u>	<u>+ 95</u>

2.	119	161	150	137	181	172	126
	<u>- 25</u>	<u>- 74</u>	<u>- 86</u>	<u>- 50</u>	<u>- 92</u>	<u>- 93</u>	<u>- 67</u>

# Playing Score-Hi



The children are playing Score-Hi. A player pushes three wooden blocks each time he has a turn.

Steve has just had a turn. His blocks landed on 8, 9, and "outside." His score is  $8 + 9 + 0$ , or ?.

If a block lands on "10 off", ? must be subtracted.

What scores did each of these children make?

SCORE BOARD	
Jack	8, 7, outside
Tom	7, outside, 10
Jean	outside, 9, 7
Nancy	8, 10, outside
Billy	7, 8, 10
Ted	9, 8, 10 off
Jeff	9, 9, 7
Tim	8, 9, 8
Alice	10, outside, 10 off
Molly	7, 9, 10
Sam	8, 8, 10 off
Peter	10, 10, 7
Sue	7, 7, 10 off
Betty	9, 9, 10
Ann	9, 7, 7
Patsy	8, 9, 7

Practice for excellence. Do Practice Set 13, page 317, and Practice Set 28, page 320.

# Test on addition facts

Tell the answers. Then write the answers on folded paper.

- |    |                                       |                                       |                                       |                                       |                                       |                                       |                                       |                                       |                                       |                                       |
|----|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 1. | $\begin{array}{r} 7 \\ 1 \end{array}$ | $\begin{array}{r} 2 \\ 9 \end{array}$ | $\begin{array}{r} 2 \\ 5 \end{array}$ | $\begin{array}{r} 2 \\ 8 \end{array}$ | $\begin{array}{r} 4 \\ 4 \end{array}$ | $\begin{array}{r} 4 \\ 1 \end{array}$ | $\begin{array}{r} 3 \\ 1 \end{array}$ | $\begin{array}{r} 7 \\ 7 \end{array}$ | $\begin{array}{r} 6 \\ 1 \end{array}$ | $\begin{array}{r} 5 \\ 4 \end{array}$ |
| 2. | $\begin{array}{r} 3 \\ 3 \end{array}$ | $\begin{array}{r} 1 \\ 1 \end{array}$ | $\begin{array}{r} 9 \\ 2 \end{array}$ | $\begin{array}{r} 1 \\ 7 \end{array}$ | $\begin{array}{r} 2 \\ 1 \end{array}$ | $\begin{array}{r} 2 \\ 2 \end{array}$ | $\begin{array}{r} 5 \\ 5 \end{array}$ | $\begin{array}{r} 7 \\ 2 \end{array}$ | $\begin{array}{r} 6 \\ 2 \end{array}$ | $\begin{array}{r} 3 \\ 6 \end{array}$ |
| 3. | $\begin{array}{r} 2 \\ 4 \end{array}$ | $\begin{array}{r} 4 \\ 5 \end{array}$ | $\begin{array}{r} 8 \\ 2 \end{array}$ | $\begin{array}{r} 6 \\ 4 \end{array}$ | $\begin{array}{r} 9 \\ 1 \end{array}$ | $\begin{array}{r} 6 \\ 6 \end{array}$ | $\begin{array}{r} 3 \\ 2 \end{array}$ | $\begin{array}{r} 2 \\ 6 \end{array}$ | $\begin{array}{r} 3 \\ 9 \end{array}$ | $\begin{array}{r} 6 \\ 5 \end{array}$ |
| 4. | $\begin{array}{r} 3 \\ 8 \end{array}$ | $\begin{array}{r} 3 \\ 4 \end{array}$ | $\begin{array}{r} 9 \\ 3 \end{array}$ | $\begin{array}{r} 7 \\ 3 \end{array}$ | $\begin{array}{r} 2 \\ 7 \end{array}$ | $\begin{array}{r} 4 \\ 8 \end{array}$ | $\begin{array}{r} 8 \\ 4 \end{array}$ | $\begin{array}{r} 5 \\ 2 \end{array}$ | $\begin{array}{r} 5 \\ 1 \end{array}$ | $\begin{array}{r} 5 \\ 8 \end{array}$ |
| 5. | $\begin{array}{r} 7 \\ 9 \end{array}$ | $\begin{array}{r} 8 \\ 5 \end{array}$ | $\begin{array}{r} 5 \\ 7 \end{array}$ | $\begin{array}{r} 7 \\ 8 \end{array}$ | $\begin{array}{r} 8 \\ 7 \end{array}$ | $\begin{array}{r} 9 \\ 6 \end{array}$ | $\begin{array}{r} 5 \\ 9 \end{array}$ | $\begin{array}{r} 8 \\ 9 \end{array}$ | $\begin{array}{r} 8 \\ 6 \end{array}$ | $\begin{array}{r} 9 \\ 5 \end{array}$ |
| 6. | $\begin{array}{r} 9 \\ 4 \end{array}$ | $\begin{array}{r} 6 \\ 7 \end{array}$ | $\begin{array}{r} 5 \\ 6 \end{array}$ | $\begin{array}{r} 4 \\ 6 \end{array}$ | $\begin{array}{r} 7 \\ 6 \end{array}$ | $\begin{array}{r} 1 \\ 8 \end{array}$ | $\begin{array}{r} 9 \\ 9 \end{array}$ | $\begin{array}{r} 1 \\ 2 \end{array}$ | $\begin{array}{r} 5 \\ 3 \end{array}$ | $\begin{array}{r} 1 \\ 5 \end{array}$ |
| 7. | $\begin{array}{r} 8 \\ 8 \end{array}$ | $\begin{array}{r} 1 \\ 3 \end{array}$ | $\begin{array}{r} 2 \\ 3 \end{array}$ | $\begin{array}{r} 6 \\ 8 \end{array}$ | $\begin{array}{r} 6 \\ 9 \end{array}$ | $\begin{array}{r} 3 \\ 5 \end{array}$ | $\begin{array}{r} 6 \\ 3 \end{array}$ | $\begin{array}{r} 1 \\ 9 \end{array}$ | $\begin{array}{r} 8 \\ 1 \end{array}$ | $\begin{array}{r} 9 \\ 8 \end{array}$ |
| 8. | $\begin{array}{r} 3 \\ 7 \end{array}$ | $\begin{array}{r} 4 \\ 7 \end{array}$ | $\begin{array}{r} 4 \\ 2 \end{array}$ | $\begin{array}{r} 8 \\ 3 \end{array}$ | $\begin{array}{r} 7 \\ 5 \end{array}$ | $\begin{array}{r} 4 \\ 9 \end{array}$ | $\begin{array}{r} 7 \\ 4 \end{array}$ | $\begin{array}{r} 9 \\ 7 \end{array}$ | $\begin{array}{r} 4 \\ 3 \end{array}$ | $\begin{array}{r} 1 \\ 6 \end{array}$ |

Study Help-Yourself Cards for any facts you do not know. Then write the answers again.





# Test on subtraction facts

Tell the answers. Then write the answers on folded paper.

1.  $\begin{array}{r} 3 \\ 3 \end{array}$     $\begin{array}{r} 3 \\ 2 \end{array}$     $\begin{array}{r} 7 \\ 7 \end{array}$     $\begin{array}{r} 5 \\ 1 \end{array}$     $\begin{array}{r} 8 \\ 8 \end{array}$     $\begin{array}{r} 9 \\ 3 \end{array}$     $\begin{array}{r} 7 \\ 3 \end{array}$     $\begin{array}{r} 7 \\ 2 \end{array}$     $\begin{array}{r} 12 \\ 6 \end{array}$     $\begin{array}{r} 4 \\ 1 \end{array}$
2.  $\begin{array}{r} 12 \\ 3 \end{array}$     $\begin{array}{r} 15 \\ 6 \end{array}$     $\begin{array}{r} 14 \\ 8 \end{array}$     $\begin{array}{r} 12 \\ 5 \end{array}$     $\begin{array}{r} 12 \\ 7 \end{array}$     $\begin{array}{r} 11 \\ 4 \end{array}$     $\begin{array}{r} 11 \\ 6 \end{array}$     $\begin{array}{r} 13 \\ 7 \end{array}$     $\begin{array}{r} 7 \\ 5 \end{array}$     $\begin{array}{r} 6 \\ 4 \end{array}$
3.  $\begin{array}{r} 12 \\ 9 \end{array}$     $\begin{array}{r} 10 \\ 5 \end{array}$     $\begin{array}{r} 8 \\ 1 \end{array}$     $\begin{array}{r} 8 \\ 4 \end{array}$     $\begin{array}{r} 6 \\ 5 \end{array}$     $\begin{array}{r} 16 \\ 9 \end{array}$     $\begin{array}{r} 14 \\ 5 \end{array}$     $\begin{array}{r} 17 \\ 9 \end{array}$     $\begin{array}{r} 4 \\ 2 \end{array}$     $\begin{array}{r} 6 \\ 6 \end{array}$
4.  $\begin{array}{r} 13 \\ 8 \end{array}$     $\begin{array}{r} 11 \\ 3 \end{array}$     $\begin{array}{r} 14 \\ 6 \end{array}$     $\begin{array}{r} 8 \\ 2 \end{array}$     $\begin{array}{r} 10 \\ 4 \end{array}$     $\begin{array}{r} 9 \\ 6 \end{array}$     $\begin{array}{r} 5 \\ 5 \end{array}$     $\begin{array}{r} 10 \\ 6 \end{array}$     $\begin{array}{r} 14 \\ 7 \end{array}$     $\begin{array}{r} 10 \\ 3 \end{array}$
5.  $\begin{array}{r} 16 \\ 8 \end{array}$     $\begin{array}{r} 18 \\ 9 \end{array}$     $\begin{array}{r} 11 \\ 9 \end{array}$     $\begin{array}{r} 8 \\ 6 \end{array}$     $\begin{array}{r} 11 \\ 2 \end{array}$     $\begin{array}{r} 10 \\ 7 \end{array}$     $\begin{array}{r} 6 \\ 1 \end{array}$     $\begin{array}{r} 2 \\ 1 \end{array}$     $\begin{array}{r} 5 \\ 2 \end{array}$     $\begin{array}{r} 6 \\ 3 \end{array}$
6.  $\begin{array}{r} 9 \\ 8 \end{array}$     $\begin{array}{r} 4 \\ 4 \end{array}$     $\begin{array}{r} 9 \\ 1 \end{array}$     $\begin{array}{r} 9 \\ 9 \end{array}$     $\begin{array}{r} 5 \\ 3 \end{array}$     $\begin{array}{r} 5 \\ 4 \end{array}$     $\begin{array}{r} 1 \\ 1 \end{array}$     $\begin{array}{r} 3 \\ 1 \end{array}$     $\begin{array}{r} 7 \\ 1 \end{array}$     $\begin{array}{r} 4 \\ 3 \end{array}$
7.  $\begin{array}{r} 9 \\ 7 \end{array}$     $\begin{array}{r} 9 \\ 4 \end{array}$     $\begin{array}{r} 14 \\ 9 \end{array}$     $\begin{array}{r} 13 \\ 4 \end{array}$     $\begin{array}{r} 15 \\ 9 \end{array}$     $\begin{array}{r} 17 \\ 8 \end{array}$     $\begin{array}{r} 15 \\ 7 \end{array}$     $\begin{array}{r} 13 \\ 9 \end{array}$     $\begin{array}{r} 13 \\ 5 \end{array}$     $\begin{array}{r} 16 \\ 7 \end{array}$
8.  $\begin{array}{r} 10 \\ 1 \end{array}$     $\begin{array}{r} 6 \\ 2 \end{array}$     $\begin{array}{r} 10 \\ 2 \end{array}$     $\begin{array}{r} 7 \\ 6 \end{array}$     $\begin{array}{r} 9 \\ 5 \end{array}$     $\begin{array}{r} 8 \\ 7 \end{array}$     $\begin{array}{r} 8 \\ 5 \end{array}$     $\begin{array}{r} 11 \\ 5 \end{array}$     $\begin{array}{r} 11 \\ 8 \end{array}$     $\begin{array}{r} 9 \\ 2 \end{array}$
9.  $\begin{array}{r} 11 \\ 7 \end{array}$     $\begin{array}{r} 13 \\ 6 \end{array}$     $\begin{array}{r} 15 \\ 8 \end{array}$     $\begin{array}{r} 12 \\ 4 \end{array}$     $\begin{array}{r} 10 \\ 8 \end{array}$     $\begin{array}{r} 7 \\ 4 \end{array}$     $\begin{array}{r} 12 \\ 8 \end{array}$     $\begin{array}{r} 8 \\ 3 \end{array}$     $\begin{array}{r} 10 \\ 9 \end{array}$     $\begin{array}{r} 2 \\ 2 \end{array}$

Study Help-Yourself Cards for any facts you do not know. Then write the answers again.



# Keeping up in arithmetic

## Oral

1. Count from 50 to 950 by 50's; by 25's; by 10's.
2. Are the sides of a square always equal in length?
3. Are the sides of a triangle always equal in length?
4. 2 dollars, 10 dimes, 5 pennies = ?.
5. Which is more,  $\frac{1}{2}$ ,  $\frac{1}{3}$ , or  $\frac{1}{4}$  of a cake?
6. If May 17 is on Monday, the next Monday is May ?.
7. 10 dimes = 1 dollar, so 40 dimes = ? dollars.
8.  $90 - 36 = 54$ , so  $90 - 54 = \underline{?}$ , and  $36 + 54 = \underline{?}$ .
9.  $35 + 47 = 82$ , so  $82 - 47 = \underline{?}$ , and  $82 - 35 = \underline{?}$ .
10. Does  $78 + 89 =$  about 150, about 160, or about 170?
11. Is 389 closer to 300 or to 400?
12. Tom said, "If I had 12¢ more, I'd have 8 dollars."  
How much money has Tom?

## Written

— Check your answers to these examples:

1.  $8 + 8 + 3 = \underline{?}$     2.  $9 + 8 + 4 = \underline{?}$     3.  $9 + 5 + 2 + 8 = \underline{?}$

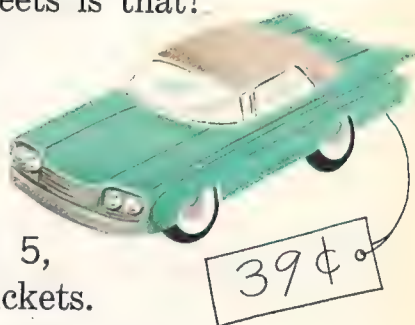
4.	75	5.	88	6.	69	7.	90	8.	182
	<u>+ 84</u>		<u>+ 9</u>		<u>+ 73</u>		<u>- 24</u>		<u>- 91</u>

9. John had 84 pennies. His aunt gave him 59 more.  
How many had he then?
10. Write in figures: fifty dollars and fourteen cents.

# PROBLEM TEST 3



1. Mary needs 24 inches of cord for one puppet string. How much does she need for 3 puppet strings?
2. John wants to buy a box of paints for 45¢. He has only 27¢. How much more does he need?
3. Jane has 100 sheets of red paper, 80 sheets of green paper, and 9 sheets of blue. How many sheets is that?
4. Ann has 38¢ in her bank. She earned 17¢ more. How much has she all together?
5. Jim has a quarter, a nickel, and a dime. Has he enough to buy this car?
6. Ann sold 8 pet-show tickets. Judy sold 5, Alice 8, and Rita 3. Together they sold   ?   tickets.
7. Jerry's fish is 1 foot and 7 inches long. Ned's is 20 inches long. Whose fish is longer? How much longer?
8. Nancy had a yard of ribbon. She used some. She has 17 inches left. She must have used   ?   inches.
9. Jack bought a dozen post cards. There are 9 left. He sent the others. How many did he send?
10. Tom is going to a ball game which starts at half past one. At 5 minutes to 1, Tom said, "The game starts in   ?   minutes."

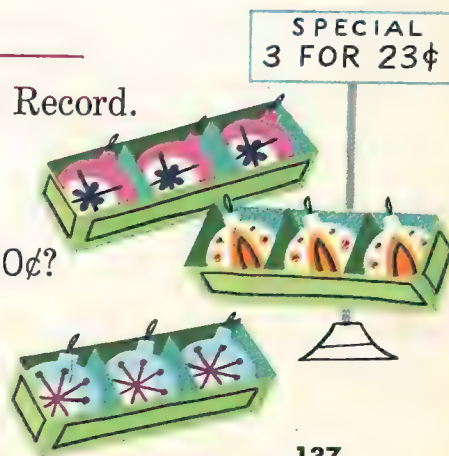


Write your score on your Problem Test Record.

Think twice!

— Write "Yes" or "No" for each answer.

- Would 6 of these balls cost as much as 50¢?
- Does  $50 + 19 - 19 + 50 = 100$ ?
- Are there 16 half pints in a gallon?





# IT'S CHECK-UP TIME



1.  $4 + 5 + 5 + 2 = ?$       2.  $6 + 8 + 0 + 7 = ?$

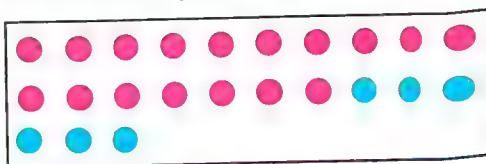
3. Which addition is *not* shown by the picture?

$17 + 3 + 3 = 23$

$18 + 6 = 24$

$17 + 6 = 23$

$17 + 6 = 20 + 3$



4. Write four facts in the 8, 9, 17 family.

5. Nancy is 9 years old. Her sister is 17 years old. Nancy is   ?   years younger than her sister.

6. Ted spent two weeks and six days at camp. How many days was he there all together?

7. Mike sold 9 papers on Monday, 9 on Tuesday, and 6 on Wednesday. How many did he sell in all?

8. What are the missing numbers?

6      12      18      24      30      36        ?          ?  

9. Joe had 32¢. He lost a coin. Now he has 7¢. What coin did he lose?

10. Tom is 1 yard 5 inches tall. He is   ?   inches tall.

If you have time, try these -

11. What number does N stand for in  $N - 9 = 89$ ?

12. The sum of  $48 + 26$  is equal to  $40 + 20 + 8 +$    ?  



J U S T      F O R      F U N      ●      ●      ●

Write five pairs of numbers which will make this a true statement.

$\triangle ? - \triangle ? = 0$

Christmas

Dec. 25

HALLOWEEN

APRIL FOOLS' DAY

APRIL 1

JULY 4

VALENTINE'S DAY

FEB. 14

## Special days

There are special days and holidays in each of the four seasons of the year.

1. Read and write the names of the seasons.
  2. Tell the months that come in each season.
  3. What season is it now? What month?
  4. In what season is each special day shown at the top of the page?
- Look at your classroom calendar.
5. In what months do you have summer vacation?
  6. What year is this? What month? What day?
  7. What does New Year's Day mean?
  8. Name the first month of the year; the last.
  9. Name the twelve months of the year.
  10. Name the seven days of the week.

### SPRING

March  
April  
May

### SUMMER

June  
July  
August

### FALL

September  
October  
November

### WINTER

December  
January  
February



## Writing dates

Jim's pony, White Foot, was born on March 15, 1962. March 15, 1962, is the date of White Foot's birth.

A date has three parts: *the month; the day of the month; the year.*

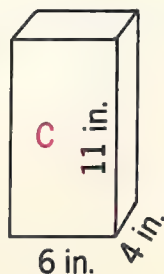
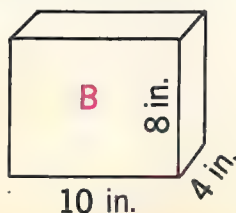
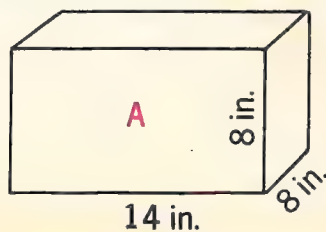
1. Tell what date it is today. Name the month, the day of the month, and the year. Write the date. Be sure to place a comma after the day of the month.
2. What date is a week from today? Write it.
3. What date is a year from today? Write it.
4. What date is next Saturday? a week from next Saturday? Write the dates.
5. On January 8, Judy said, "I can tell what date is a week from today without looking at the calendar." How can she do that? Write the date.
6. On what day of the week do these days come this year? In what season does each come?

GROUND HOG DAY [Feb. 2]	COLUMBUS DAY [Oct. 12]
FLAG DAY [June 14]	CHRISTMAS DAY [Dec. 25]
7. Thanksgiving Day is the fourth Thursday in November. In what season does it come? On what day of the month does it come this year? Write the date.
8. How many days are there in January? June? May?
9. How many Sundays are there in February this year? On what dates do these Sundays come?
10. On what day of the week does the 10th of March come? the 16th? the 21st? the 31st?



## Using common sense

1. Should the water in a little child's wading pool be about 8 inches, 2 feet, or 5 feet deep?
2. When the temperature is  $28^{\circ}$ , might you be (1) going barefooted, or (2) wearing snow boots?
3. Is the height of an 8-year-old boy nearer 4 inches, 4 feet, or 4 yards?
4. Will two cans of dog food at 19¢ a can cost about \$.30, \$.40, or \$.60?
5. Is the length of your foot nearer 2 inches, 4 inches, or 6 inches?
6. On an all-day hike, would some Cub Scouts be likely to walk  $\frac{1}{2}$  mile, 5 miles, or 50 miles?
7. Jack bought  $\frac{1}{2}$  pound of candy eggs. He counted them. There were 49. If he had bought a pound, would he have about 60, 100, or 200?
8. Is the door of your classroom about 10 feet, 7 feet, or 12 feet high?
9. To measure the length of your classroom, would you use a foot ruler, a long stick, or a yardstick?
10. Does a pair of shoes cost about \$.50, \$5.00, or \$50.00?
11. In 15 minutes Carl can work 14 examples. In half an hour, can he work about 20, or 30, or 40 examples?
12. To make a bed for a doll 1 foot tall, which of these boxes would you choose?



## Should you add or subtract?

— Tell whether to add or subtract to find each answer. Then work the problems.

1. Joe planted a pine tree 9 inches tall. Now it is 17 inches tall. To find how much it has grown, he should   ?  .
2. Ben earned 55¢ and 20¢ running errands. To find how much he earned in all, he should   ?  .
3. Four children are planning a boat trip. There is room for 12 children in the boat. To find how many they can invite, they should   ?  .
4. Susan is 8 years old. Ann is 13 years old. To find how much older Ann is than Susan, you should   ?  .
5. Judy saved 10¢. Her brother saved 15¢ more than Judy. To find how much her brother saved, you should   ?  . To find how much they both saved, you should   ?  .
6. Tony has a half dollar. He wants a book that costs 89¢. To find how much more he needs, he should   ?  .
7. Nine girls and 7 boys in a class have skates. To find how many children have skates, you should   ?  .
8. Art has 15 comic books. He wants to give 8 books to Jack. To find how many books Art will have left, you should   ?  .
9. The temperature rose from 40° to 52°. To find how many degrees it rose, you should   ?  .
10. To find the total cost of a 15-cent sandwich and a 20-cent soda, you should   ?  .

# What do you need to know and do?

1. Sue has a quarter. She wants to buy an ice cream cone. She wants to find out how much she will have left after she buys the cone.

- What does she need to know?
- What does she need to do? (add or subtract)

— What do you need to know and do to find:

2. The number of days in two weeks?
3. The total value of 2 quarters, 3 dimes, and 2 nickels?
4. How much more money you need to buy a comic book?
5. How much more you weigh than your friend?
6. The length in inches of a wire you know is 1 yard 9 inches long?
7. How many quarts of oil are in a 2-gallon tank?
8. The number of yards of cloth needed to cover a bulletin board 6 feet long?
9. How many ounces a 1-pound 5-ounce puppy weighs?
10. How much you grew during the school year?

Problem  
solving  
help



J U S T F O R F U N

- Write five 1's in an addition, so the sum is 14.
- Write five 2's in an addition, so the sum is 28.
- Write three 6's in an addition, so the sum is 72.
- Copy this addition. Then cross off 111  
6 digits in it so the sum of the 777  
remaining numbers is 20. 
$$\begin{array}{r} 111 \\ 777 \\ + 999 \\ \hline \end{array}$$



# How well do you add and subtract?

No  please!

1. What "doubles" facts help you know these sums?

$$\begin{array}{r} 7 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 9 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$$

2. Add 9 to each of these numbers.

27

16

35

24

29

33

21

32

3. Add 8 to each number in Exercise 2. Add 7; 6; 5.

4. Tell two other facts that belong with each of these pairs.

$$\begin{cases} 14 - 5 = 9 \\ 14 - 9 = 5 \end{cases}$$

$$\begin{cases} 13 - 9 = 4 \\ 13 - 4 = 9 \end{cases}$$

$$\begin{cases} 9 + 6 = 15 \\ 6 + 9 = 15 \end{cases}$$

$$\begin{cases} 8 + 9 = 17 \\ 9 + 8 = 17 \end{cases}$$

5. Tell the *key facts* that help you find these sums.

$$34 + 5$$

$$18 + 7$$

$$43 + 9$$


$$17 + 6$$

$$32 + 8$$

$$27 + 3$$

$$38 + 6$$

$$34 + 4$$

Use your 

- Find the sums and check.

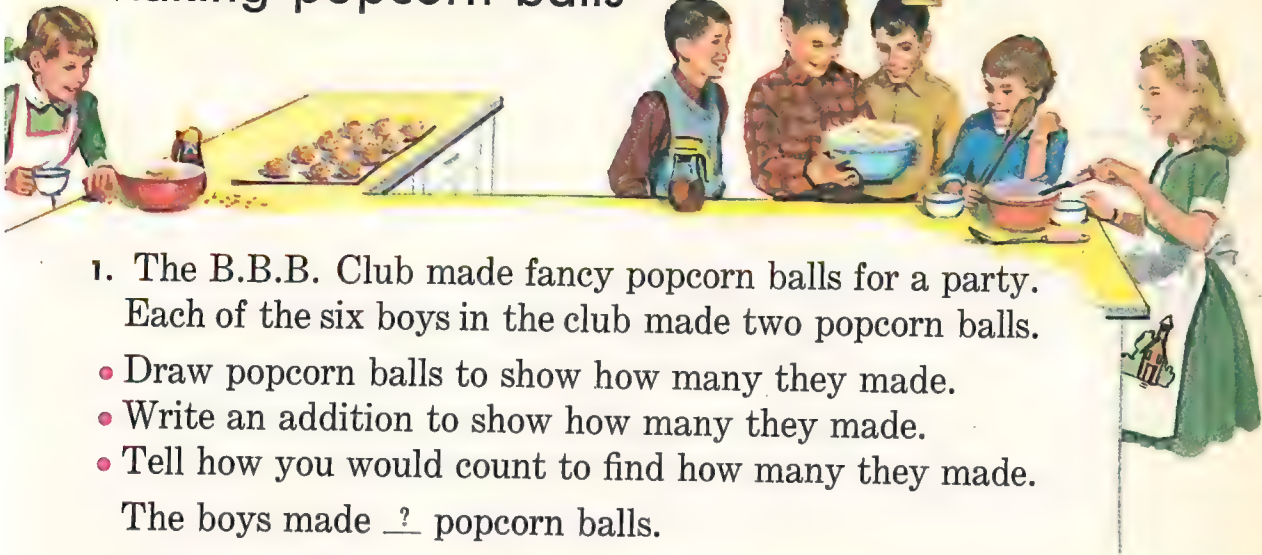
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 98 \\ 69 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ 69 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 66 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ 83 \\ \hline \end{array}$	$\begin{array}{r} 77 \\ 57 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ 55 \\ \hline \end{array}$	$\begin{array}{r} 55 \\ 64 \\ \hline \end{array}$

2.	$\begin{array}{r} 3 \\ 9 \\ 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 2 \\ 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 3 \\ 4 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 6 \\ 3 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 9 \\ 5 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 6 \\ 7 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 4 \\ 9 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 8 \\ 4 \\ 7 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

- Subtract and check.

3.	$\begin{array}{r} 96 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 82 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 125 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 132 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 140 \\ 92 \\ \hline \end{array}$	$\begin{array}{r} 173 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 155 \\ 86 \\ \hline \end{array}$
----	---	---	---	--	--	--	--	--

# Making popcorn balls



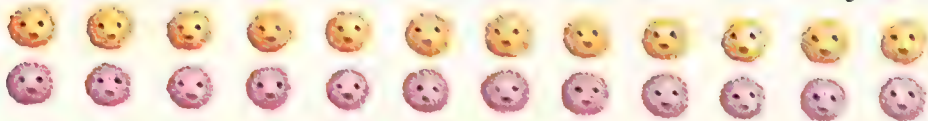
1. The B.B.B. Club made fancy popcorn balls for a party.  
Each of the six boys in the club made two popcorn balls.
- Draw popcorn balls to show how many they made.
- Write an addition to show how many they made.
- Tell how you would count to find how many they made.

The boys made   ?   popcorn balls.

2. All together the club made 24 popcorn balls.  
The boys made 12. The girls made   ?  .

3. One half of the popcorn balls were colored pink.  
Use the picture in Exercise 4 to find  $\frac{1}{2}$  of 24.

4. They put faces on the 24 popcorn balls. Here they are.



How many raisins did they need for eyes? Count the eyes by 2's.

5. Joan counted by 2's and found they needed 24 raisins for the top row of balls. She said, "This addition shows how to find how many raisins we need in all."

$$\begin{array}{r} 24 \\ + 24 \\ \hline 48 \end{array}$$

Is Joan right? Explain.

Think twice!

They used gumdrops to make the mouths on the faces.  
One gumdrop made 2 mouths.

How many gumdrops did they need?

## Problems without numbers

Tell whether the missing word in each problem is *add* or *subtract*.

1. You know how old Polly is. You know how old Bob is. To find how much younger Polly is than Bob, you   ?.
2. You know how much money Tom had, and how much he spent. To find how much he has left, you   ?.
3. You know how many peanuts you had. You know how many are left. To find how many you ate, you   ?.
4. You want to buy paint and a brush. You know the cost of each. To find the total cost, you should   ?.
5. You know how many boys are in your class, and how many girls. To find the number of children, you   ?.
6. You know how much money Ann has. You know how much Sue has. To find how much more Ann has than Sue, you   ?.
7. You know the cost of a pencil, of an eraser, and of a box of crayons. To find the cost of all, you   ?.
8. You know how much money Jim has. You know how much skates cost. To find how much more Jim needs for the skates, you   ?.
9. You know how many children are in class. You know how many pencils your teacher has. To find how many more are needed for each child to have one, you   ?.
10. You know the cost of a large ball and of a small ball. To find the difference in cost, you   ?.



# Keeping up in arithmetic

## Oral

1. What things do you buy by the yard? by the quart?
2.  $8 + 7 = 15$ , so  $15 - 7 = \underline{\quad}$ ; and  $15 - 8 = \underline{\quad}$ .
3. Read these temperatures:  $32^{\circ}$   $68^{\circ}$   $0^{\circ}$   $72^{\circ}$
4. Jack has a yardstick. How can he use it to measure a stick 1 ft. long? 2 ft. long? 3 ft. long?
5. How many nickels are there in each of the following:  
a dime    a quarter    a half dollar    a dollar
6. Read these:  $5\text{¢}$      $\$.05$      $\$.310$      $\$.101$      $\$.12.25$   
IV    VII    XI    745    608
7. Beginning with 5, count by 10's to 95.
8. Name the days of the week; the months of the year.

## Written

— Check your answers to these examples.

1.  $\begin{array}{r} 64 \\ + 32 \\ \hline \end{array}$
2.  $\begin{array}{r} 75 \\ + 69 \\ \hline \end{array}$
3.  $\begin{array}{r} 59 \\ - 23 \\ \hline \end{array}$
4.  $\begin{array}{r} 106 \\ - 42 \\ \hline \end{array}$
5.  $\begin{array}{r} 85 \\ - 38 \\ \hline \end{array}$
6. Sue is going to the museum. She needs 20¢ for bus fare and 60¢ for lunch. In all, Sue needs  $\underline{\quad}$ ¢.
7. In one whole there are  $\underline{\quad}$  fourths.
8. Bob spends 14¢. How much change does he get from a quarter?
9. Copy, add, and check.  $4 + 5 + 3 + 6$
10. Do an addition to find the number of days in four weeks; five weeks.

# Written practice in adding

— Add down. Check by adding up. Write answers on folded paper.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
1.	5	8	9	7	8	9	7	8	8	7
	2	6	5	7	5	5	5	4	6	5
	3	7	6	7	8	6	8	3	4	8
2.	5	8	4	9	4	6	6	5	9	8
	6	5	6	5	5	5	8	7	4	9
	2	5	8	5	5	7	8	7	4	7
	6	4	2	3	8	2	3	5	7	3

— Write in columns, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
3.	$7 + 7 + 6$	$3 + 8 + 9$	$5 + 5 + 5$	$8 + 7 + 6$
4.	$8 + 3 + 7$	$8 + 6 + 8$	$6 + 6 + 6$	$8 + 9 + 8$
5.	$6 + 6 + 5$	$9 + 4 + 9$	$7 + 6 + 8$	$8 + 8 + 7$

6. In a game of ring toss Peter won 5, 6, and 7 points.  
In all, he won ? points.

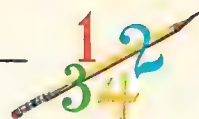
7. Patty has a ribbon 1 yard 6 inches long. The ribbon  
is ? inches long.

8. Do additions to find the missing numbers.

- 3 weeks = ? days.
- 5 yards = ? feet.
- 3 gallons = ? quarts.
- 2 feet = ? inches.

*Practice for excellence.* Do Practice Set 14, page 317.

# SELF-HELP TEST 5



— Copy, find the answers, and check.

- |   |  |  |
|---|--|--|
| 1. $3 + 2 + 4$ [22]                               | 7. $\begin{array}{r} 42 \\ + 97 \end{array}$ [87]  | 8. $\begin{array}{r} \$ .65 \\ + .25 \end{array}$ [106]  |
| 2. $30 + 35 + 23$ [77]                            |  |  |
| 3. $68 + 4 + 57$ [127]                            | 9. $\begin{array}{r} 96 \\ - 23 \end{array}$ [69]  | 10. $\begin{array}{r} 82 \\ - 47 \end{array}$ [111-112]  |
| 4. $8 + 6 + 7 + 2$ [123-126]                      |  |  |
| 5. $\begin{array}{r} 43 \\ + 25 \end{array}$ [67] | 6. $\begin{array}{r} 27 \\ + 35 \end{array}$ [105] | 11. $\begin{array}{r} 146 \\ - 74 \end{array}$ [88]      |
|   |  | 12. $\begin{array}{r} \$ .82 \\ - .46 \end{array}$ [113] |

# SELF-HELP TEST 6



1. Write the number that means 2 hundreds, 3 tens, and 4 ones. [83-84]

2. Write the numbers by 100's from 100 to 1000. [83]

3. Write the next five numbers after 79. [15-16]

4. What time is it by this clock? —→



[41-42]

5. Bob has 28¢. He wants to buy a flashlight that costs a half dollar. How much more does he need? [113]

6. Jim will have a birthday party on Saturday of this week. On what date will he have the party? [140]

7. Tom says he is 1 yard 16 inches tall. How many inches tall is he? [105]

8. Jack went to the store to get two quart bottles of grape juice. He can get only one quart bottle and the rest in pint bottles. How many pint bottles should he get? [47]



# IT'S CHECK-UP TIME



1. Add and check:

$$\begin{array}{r} 67 \\ + 28 \\ \hline \end{array}$$

2. Subtract and check:

$$\begin{array}{r} 72 \\ - 46 \\ \hline \end{array}$$

3. There are ? days in a week; ? months in a year.

4. Jim knows the cost of skates and of a sled. To find the difference in cost should he add, or should he subtract?

5. Tony got his dog, Topsy, on January 17, 1962. Two weeks later Topsy's puppies were born. On what date were Topsy's puppies born?

6. 130 is how much more than 65?

7. Sue had \$.74. She wants to spend \$.37 for a trip. How much will she have left?

8. Sam has collected pictures of 57 wild flowers and 45 garden flowers. He has ? pictures.

9. Donna has 48¢. How much more does she need to buy a 75-cent toy?

10. A space kite costs \$1.95. The kite string costs \$.49. Do you estimate both cost about \$2.00, about \$2.50, or about \$3.00?



If you have time, try these –

What are the missing digits? Prove you are right.

11.

$$\begin{array}{r} ? ? \\ + 72 \\ \hline 139 \end{array}$$

$$\begin{array}{r} 7 ? \\ - 35 \\ \hline 35 \end{array}$$

12.

$$\begin{array}{r} 64 \\ + ? ? \\ \hline 122 \end{array}$$

$$\begin{array}{r} ? ? \\ - 56 \\ \hline 98 \end{array}$$

# The nearest hundred

1. Say the numbers as you go up and down this number line by hundreds.

2. What color is the mark half way between 0 and 100? What number does it stand for?

3. What numbers do the other blue marks stand for?

4. What number is half way between:

400 and 500      600 and 700      800 and 900

5. Climb by 10's on the line from:

500 to 600      700 to 800      900 to 1000

6. Find 420 on the line. Is it nearer to 400 or to 500?

7. Find 470 on the line. Is it nearer to 400 or to 500?

8. How do the blue marks help you answer Exercises 6 and 7?

9. What hundred is each of these numbers nearest to?

210      580      674      882      817

460      130      523      903      871

10. Is  $210 + 480$  closer to 600 or 700?

Think: 210 is close to 200; 480 is close to 500;  
so  $210 + 480$  is about  $200 + 500$ , or 700.

11. Is  $370 + 512$  closer to 900 or 800? Explain.

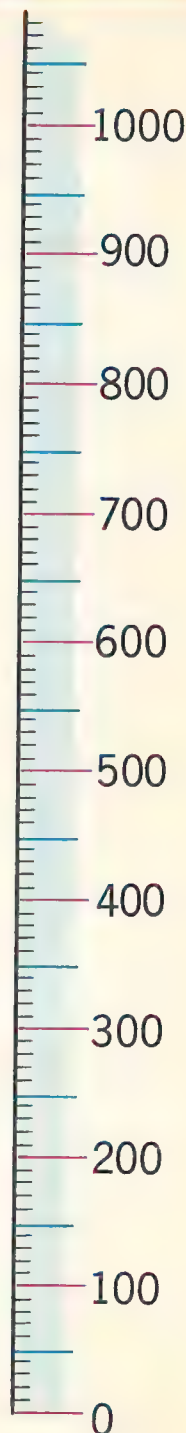
12. Is  $90 + 420$  closer to 500 or 600? Explain.

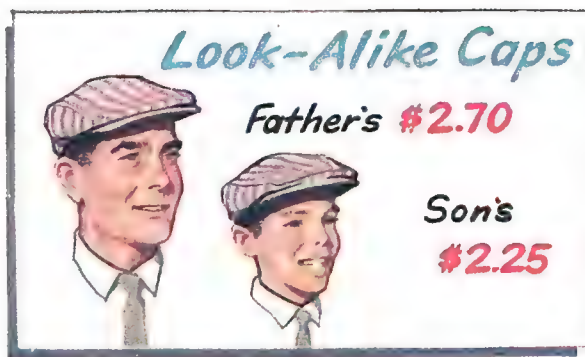
13. Is  $612 + 235$  closer to 800 or 900? Explain.

14. Is  $\$1.90 + \$3.06$  closer to \$4 or \$5? Explain.

15. Is  $\$2.11 + \$3.09$  closer to \$5 or \$6? Explain.

16. Is  $\$3.95 + \$6.89$  closer to \$10 or \$11? Explain.





## Adding dollars and cents

Bud and his father are buying Look-Alike caps. Will two caps cost about \$4, or \$5? Check your estimate by adding.

Here are two ways of writing the addition.

LONG WAY		SHORT WAY
Father's cap -- 2 dollars 7 dimes 0 pennies		\$2.70
Bud's cap ----- 2 dollars 2 dimes 5 pennies		<u>2.25</u>
Both caps ----- 4 dollars 9 dimes 5 pennies = \$4.95		<u>\$4.95</u>

- Add the pennies. 0 pennies + 5 pennies = 5 pennies.  
Write the 5 in the pennies column.
- Add the dimes. 7 dimes + 2 dimes = 9 dimes.  
Write the 9 in the dimes column.
- Add the dollars. 2 dollars + 2 dollars = 4 dollars.  
Write the 4 in the dollars column.

The cents point in the sum has been placed just under the cents points in the example. Why? Where have the dollar signs been placed?

— Copy, add, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. \$2.40 <u>.26</u>	\$1.23 <u>.36</u>	\$6.72 <u>3.16</u>	\$5.42 <u>2.05</u>	\$4.31 <u>1.58</u>	\$1.37 <u>8.10</u>
2. \$1.48 <u>.30</u>	\$7.51 <u>.40</u>	\$1.53 <u>5.30</u>	\$2.13 <u>4.44</u>	\$2.48 <u>2.51</u>	\$7.15 <u>2.70</u>
3. \$5.17 + \$3.32	4. \$4.75 + \$2.24	5. \$4.20 + \$.76			



# CARNIVAL

GIRLS' PRIZES 234

BOYS' PRIZES 253

## Adding three-place numbers

Do you estimate that about 400 or about 500 prizes will be given away at the carnival? Try to find the exact number without help.

Here are two ways of finding the sum of 234 and 253.

LONG WAY

Girls' prizes -- 2 hundreds 3 tens 4 ones  
Boys' prizes -- 2 hundreds 5 tens 3 ones  
In all ----- 4 hundreds 8 tens 7 ones

SHORT WAY

$$\begin{array}{r} 234 \\ + 253 \\ \hline 487 \end{array}$$

- Add the ones.  $4 + 3 = 7$ . Write the 7 in the ones place.
- Add the tens.  $3 + 5 = 8$ . Write the 8 in the tens place.
- Add the hundreds.  $2 + 2 = 4$ . Write the 4 in the hundreds place.

The addition shows that   4   prizes will be given.

1. Copy, add, and check.

*a*  
 $\begin{array}{r} 371 \\ + 410 \\ \hline \end{array}$

*b*  
 $\begin{array}{r} 532 \\ + 241 \\ \hline \end{array}$

*c*  
 $\begin{array}{r} 874 \\ + 124 \\ \hline \end{array}$

*d*  
 $\begin{array}{r} 561 \\ + 314 \\ \hline \end{array}$

*e*  
 $\begin{array}{r} 256 \\ + 603 \\ \hline \end{array}$

2.  $124 + 553$

4.  $320 + 341$

6.  $542 + 450$

3.  $425 + 261$

5.  $231 + 26$

7.  $245 + 13$

*Practice for excellence.* Do Practice Set 15, page 317.



## Using arithmetic

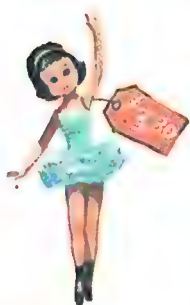


1. What will two of each of these cost?

- punching bag at \$4.10
- dancing doll at \$3.30
- football at \$2.14
- jingle bracelet at \$1.44



2. Dick has 275 stamps and his brother has 310 stamps. How many do they have together?



3. There are 423 boys and 374 girls in the Adams School. How many children are there in the school?

4. Eddie bought a basketball for \$2.65 and a building set for \$1.34. How much money did he spend?

5. Jane's mother bought her a pair of boots for \$2.40 and a jacket for \$6.50. How much did both cost?

6. Lucy sold 120 eggs last week and 144 eggs this week. How many eggs did she sell?



7. Today 252 boys and 246 girls ate lunch at school. How many children ate lunch at school today?

8. On Monday Billy and his father drove 375 miles. They drove 224 miles the next day. How far did they drive in two days?

9. Peter wants a baseball glove marked \$1.45 and a bat marked \$1.50. How much will both cost?



10. Pat is going to dance at a P.T.A. show. He needs a coat that costs \$2.25, and a paper-straw hat that costs \$.43.

How much will the coat and hat cost?

# Changing ten pennies to a dime

Estimate the cost of these dresses for Penny and her mother. Will it be about \$9, or \$10?

Without help, try to find the exact cost of the two dresses.

Penny added as shown below. She had trouble writing 9 dollars 6 dimes 18 pennies with a dollar sign and cents point.

Can you do it?



*Mother's dress* 5 dollars 3 dimes 9 pennies  
*Penny's dress* 4 dollars 3 dimes 9 pennies  
*Both dresses* 9 dollars 6 dimes 18 pennies

Here is a short way to write the addition.

- Add the pennies.  $9 + 9 = 18$ .
- Change 18 pennies to 1 dime 8 pennies.  
Write the 8 in the pennies column.  
Write the 1 above the dimes column.
- Add the dimes.  $1 + 3 + 3 = 7$ .  
Write the 7 in the dimes column.  
Tell how to finish the addition. The total cost is ?.

$$\begin{array}{r} .1 \\ \$5.39 \\ + 4.39 \\ \hline \$9.78 \end{array}$$

1. Copy without the answers. Then add and check with the given answers.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
\$1.49	\$2.37	\$ 7.25	\$4.59	\$1.09	\$6.77
1.36	1.57	6.05	8.18	.83	.16
<u>\$2.85</u>	<u>\$3.94</u>	<u>\$13.30</u>	<u>\$12.77</u>	<u>\$1.92</u>	<u>\$6.93</u>



## Practice in adding money

— How will Exercises 1, 2, and 3 help you do Exercise 4?

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $\begin{array}{r} \$1.16 \\ + .03 \\ \hline \end{array}$	$\begin{array}{r} \$1.13 \\ + .03 \\ \hline \end{array}$	$\begin{array}{r} \$1.15 \\ + .08 \\ \hline \end{array}$	$\begin{array}{r} \$1.16 \\ + .05 \\ \hline \end{array}$	$\begin{array}{r} \$1.15 \\ + .09 \\ \hline \end{array}$	$\begin{array}{r} \$1.12 \\ + .03 \\ \hline \end{array}$
2. $\begin{array}{r} \$0.09 \\ .07 \\ + .03 \\ \hline \end{array}$	$\begin{array}{r} \$0.05 \\ .08 \\ + .03 \\ \hline \end{array}$	$\begin{array}{r} \$0.06 \\ .09 \\ + .08 \\ \hline \end{array}$	$\begin{array}{r} \$0.08 \\ .08 \\ + .05 \\ \hline \end{array}$	$\begin{array}{r} \$0.09 \\ .06 \\ + .09 \\ \hline \end{array}$	$\begin{array}{r} \$0.04 \\ .08 \\ + .03 \\ \hline \end{array}$
3. How many dimes and pennies are in each of these?					
$\begin{array}{r} \$1.19 \\ 5.17 \\ + 1.43 \\ \hline \end{array}$	$\begin{array}{r} \$1.16 \\ 1.48 \\ + 2.23 \\ \hline \end{array}$	$\begin{array}{r} \$2.23 \\ 2.39 \\ + 1.18 \\ \hline \end{array}$	$\begin{array}{r} \$2.21 \\ .18 \\ + 2.45 \\ \hline \end{array}$	$\begin{array}{r} \$2.24 \\ 2.16 \\ + .09 \\ \hline \end{array}$	$\begin{array}{r} \$1.15 \\ .38 \\ + 2.13 \\ \hline \end{array}$

— Copy, add, and check.

5. $\begin{array}{r} \$2.49 \\ 2.25 \\ \hline \end{array}$	$\begin{array}{r} \$1.35 \\ 1.59 \\ \hline \end{array}$	$\begin{array}{r} \$1.69 \\ 3.15 \\ \hline \end{array}$	$\begin{array}{r} \$3.75 \\ 1.19 \\ \hline \end{array}$	$\begin{array}{r} \$5.56 \\ .37 \\ \hline \end{array}$	$\begin{array}{r} \$6.28 \\ .45 \\ \hline \end{array}$
6. $\begin{array}{r} \$3.67 \\ 4.19 \\ \hline \end{array}$	$\begin{array}{r} \$4.07 \\ 3.86 \\ \hline \end{array}$	$\begin{array}{r} \$5.29 \\ 9.59 \\ \hline \end{array}$	$\begin{array}{r} \$6.86 \\ 7.08 \\ \hline \end{array}$	$\begin{array}{r} \$ .47 \\ 6.45 \\ \hline \end{array}$	$\begin{array}{r} \$3.75 \\ 2.06 \\ \hline \end{array}$

— Estimate each answer. Then find the exact answer.

7. Ann's mother bought her mittens for \$1.29 and a skating cap for \$2.35. How much did she spend?

8. Paul wants a sled which costs \$6.75 and skates which cost \$3.05. How much will both cost?

9. Tom saved \$2.48. His aunt gave him \$1.25. Did he have enough then to buy a four-dollar camera?

10. Pete earned \$2.25 and \$1.65. In all he earned   ?  .



# Changing ones to tens

Ted needs 250 feet of string for his space kite.

A ball of kite string is 138 feet long.

Estimate to see if two balls of string will be enough.

Without help, try to find exactly how many feet of string are in two balls.

Here is a way to do the addition.

► Add the ones.  $8 + 8 = 16$ .

► Change 16 ones to 1 ten 6 ones.

Write the 6 in ones place.

Write the 1 above tens place.

► Add the tens.  $1 + 3 + 3 = 7$ .

Write the 7 in tens place. Tell how to finish the addition. Check by adding up.

Are two balls of string enough for Ted's kite?

$$\begin{array}{r} 1 \\ 138 \\ 138 \\ \hline 276 \end{array}$$

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 256 \\ 314 \\ \hline \end{array}$	$\begin{array}{r} 107 \\ 483 \\ \hline \end{array}$	$\begin{array}{r} 406 \\ 284 \\ \hline \end{array}$	$\begin{array}{r} 275 \\ 718 \\ \hline \end{array}$	$\begin{array}{r} 657 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 557 \\ 33 \\ \hline \end{array}$	$\begin{array}{r} 527 \\ 168 \\ \hline \end{array}$
2.	$\begin{array}{r} 275 \\ 116 \\ \hline \end{array}$	$\begin{array}{r} 847 \\ 125 \\ \hline \end{array}$	$\begin{array}{r} 367 \\ 428 \\ \hline \end{array}$	$\begin{array}{r} 285 \\ 707 \\ \hline \end{array}$	$\begin{array}{r} 354 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 467 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 674 \\ 17 \\ \hline \end{array}$
3.	$\begin{array}{r} 467 \\ 519 \\ \hline \end{array}$	$\begin{array}{r} 238 \\ 657 \\ \hline \end{array}$	$\begin{array}{r} 406 \\ 389 \\ \hline \end{array}$	$\begin{array}{r} 125 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 789 \\ 201 \\ \hline \end{array}$	$\begin{array}{r} 375 \\ 608 \\ \hline \end{array}$	$\begin{array}{r} 537 \\ 308 \\ \hline \end{array}$

4. Joe has a 138-foot ball of string, and a 165-foot ball of string. How many feet of string has he in all?

*Practice for excellence.* Do Practice Set 16, page 317.



# How much money?



— Tell how much money each child has.

1. Ann: 1 quarter, 1 dime, and 1 nickel.
2. Patty: 1 half dollar, 1 quarter, and 1 dime.
3. Alice: 2 quarters, 2 nickels, and 3 pennies.
4. Dick: 1 half dollar, 5 nickels, and 4 cents.
5. Carl: 1 half dollar, 1 quarter, and 2 dimes.
6. Jim: 1 dollar, 1 quarter, and 3 dimes.
7. Dave: 1 quarter, 4 dimes, 3 nickels.
8. Debby: 1 half dollar, 1 quarter, 3 nickels.

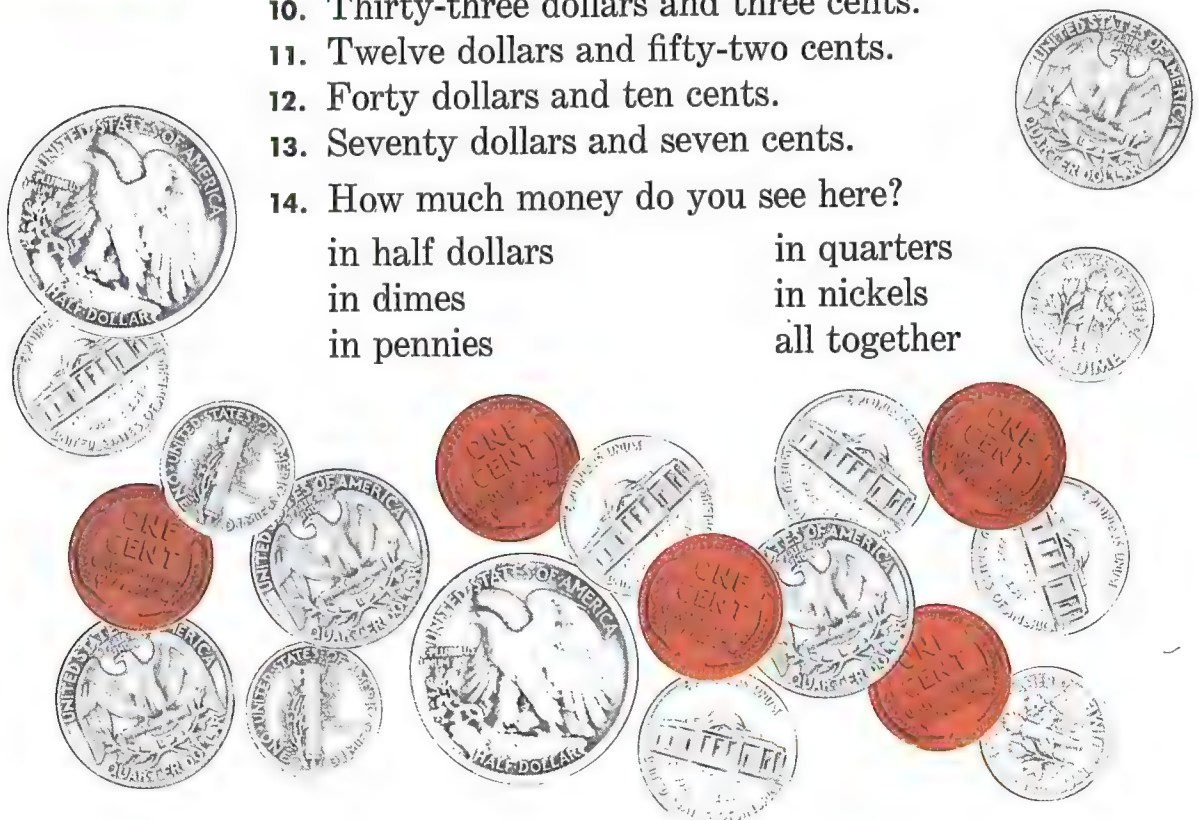
9. Write each answer to Exercises 1 to 8.  
Use dollar signs and cents points.

— Write in figures. Use dollar signs and cents points.

10. Thirty-three dollars and three cents.
11. Twelve dollars and fifty-two cents.
12. Forty dollars and ten cents.
13. Seventy dollars and seven cents.
14. How much money do you see here?

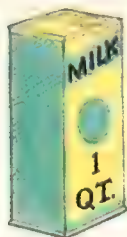
in half dollars  
in dimes  
in pennies

in quarters  
in nickels  
all together

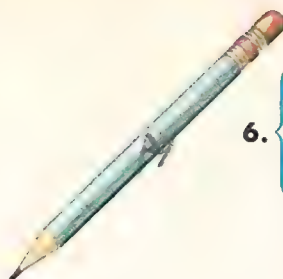




# Which price is sensible?



1. { nickel  
dime  
quarter



6. { \$ .10  
\$1.00  
\$2.00



2. { \$5.  
\$45.  
\$450.



7. { \$ .08  
\$ .28  
\$ .80



3. { \$ 1.95  
\$ 7.95  
\$26.95



8. { \$ .05  
\$ .15  
\$ .95



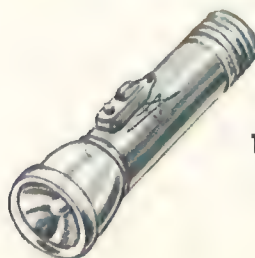
4. { \$ .39  
\$2.39  
\$3.29



9. { \$ .01  
\$ .12  
\$1.20

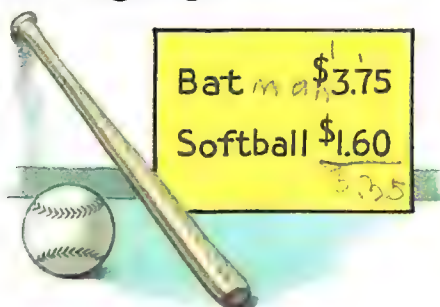


5. { \$ .06  
\$ .60  
\$6.00



10. { dime  
quarter  
dollar

# Changing dimes to dollars



Will the bat and ball cost more than \$5, or less than \$5?

Without help, find the exact cost.

Here is the way Don found the cost:

Try to write 4 dollars, 3 dollars 7 dimes 5 pennies  
 13 dimes, 5 pennies with a 1 dollar 6 dimes 0 pennies  
 dollar sign and cents point.  
 How can you do it?

Here is a short way to do the addition.

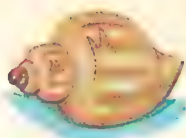
- ▶ Add the pennies.  $5 + 0 = 5$ .  
Write the 5 in the pennies column.
- ▶ Add the dimes.  $7 + 6 = 13$ .  
▶ *Change 13 dimes to 1 dollar 3 dimes.*  
Write the 3 in dimes column.  
Write the 1 dollar above the dollars column.
- ▶ Add the dollars.  $1 + 3 + 1 = 5$ . Where will you write the 5?  
Write the dollar sign and cents point in the sum.

$$\begin{array}{r} 1 \\ \$3.75 \\ + 1.60 \\ \hline \$5.35 \end{array}$$

— Copy, add, and check.

	a	b	c	d	e	f	g
1.	\$3.83	\$1.86	\$6.76	\$5.64	\$7.95	\$.84	\$.54
	<u>2.34</u>	<u>6.70</u>	<u>1.43</u>	<u>2.83</u>	<u>4.34</u>	<u>.54</u>	<u>.72</u>
2.	\$6.81	\$3.76	\$3.70	\$2.72	\$3.86	\$.80	\$.61
	<u>2.95</u>	<u>.80</u>	<u>3.58</u>	<u>2.95</u>	<u>5.43</u>	<u>.85</u>	<u>.55</u>

# Changing tens to hundreds



Ted collected 230 shells for his hobby shelf. Jeff found 195. Find how many shells they have in all.

Here is a way to do the addition.

- ▶ Add the ones.  $0 + 5 = 5$ .  
Write the 5 in the ones place.
- ▶ Add the tens.  $3 + 9 = 12$ .  
Change 12 tens to 1 hundred 2 tens.  
Write the 2 in the tens place.  
Write the 1 above the hundreds place.
- ▶ Add the hundreds.  $1 + 2 + 1 = 4$ .  
Write the 4 in the hundreds place.

$$\begin{array}{r} 1 \\ 230 \\ + 195 \\ \hline 425 \end{array}$$

1. Sally's class collects china animals. They have 152 dogs and 166 cats. How many animals have they in all?
2. Pete collects rocks. He has 230 rocks in one box and 182 in another. How many rocks has he in both boxes?
3. Janet collects buttons. She has 124 buttons in one box and 84 in another. How many buttons has she in all?



— Copy, add, and check.

a	b	c	d
4. $243 + 185$	$445 + 74$	$473 + 283$	$534 + 83$
5. $370 + 294$	$356 + 83$	$594 + 160$	$653 + 96$
6. $563 + 375$	$565 + 52$	$472 + 277$	$765 + 84$

Think twice!

Ted and Jeff sold 425 shells. Price: 25 for 50¢. How much did they get for the shells?

Practice for excellence. Do Practice Set 17, page 318.





## Keeping in practice

— How will Exercises 1, 2, and 3 help you do Exercise 4?

1. Tell these sums. Add down.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
4	10	11	12	16	17	16
<u>+ 6</u>	<u>+ 4</u>	<u>+ 2</u>	<u>+ 5</u>	<u>+ 4</u>	<u>+ 5</u>	<u>+ 7</u>

2. Add down. Check by adding up.

2	5	5	5	8	9	7
2	5	6	7	8	8	9
<u>6</u>	<u>4</u>	<u>2</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>7</u>

3. Tell how many dollars and dimes there are in:

10 dimes	14 dimes	13 dimes	17 dimes
20 dimes	22 dimes	23 dimes	

4. Copy, add, and check.

\$2.23	\$3.51	\$2.50	\$ .50	\$4.83	\$1.92	\$2.72
1.22	2.53	.65	4.72	.80	2.86	.94
<u>3.60</u>	<u>1.42</u>	<u>1.24</u>	<u>3.57</u>	<u>3.45</u>	<u>3.50</u>	<u>3.71</u>

— Subtract and check. Use folded paper.

5.	69	98	87	98	69	78	59
	<u>35</u>	<u>24</u>	<u>32</u>	<u>15</u>	<u>46</u>	<u>56</u>	<u>23</u>
6.	83	76	85	62	74	88	57
	<u>26</u>	<u>27</u>	<u>38</u>	<u>49</u>	<u>67</u>	<u>79</u>	<u>49</u>
7.	167	157	136	143	185	174	126
	<u>80</u>	<u>95</u>	<u>74</u>	<u>92</u>	<u>90</u>	<u>84</u>	<u>56</u>

KNOW YOUR FACTS Take the tests on pages 134 and 135.

# Changing twice in addition



Bud has 168 United States stamps.  
He has 174 stamps from other countries. Do you estimate that he has about 300 or 400 stamps in all?

Can you find the sum of 168 and 174 without help?

Here is a way to do the addition.

- ▶ Add the ones.  $8 + 4 = 12$ .
- ▶ *Change 12 ones to 1 ten 2 ones.*  
Write the 2 in ones place.  
Write the 1 above tens place.
- ▶ Add the tens.  $1 + 6 + 7 = 14$ .
- ▶ *Change 14 tens to 1 hundred 4 tens.*  
Write the 4 in tens place.  
Write the 1 above hundreds place.
- ▶ Add the hundreds.  $1 + 1 + 1 = 3$ .  
Write the 3 in hundreds place.

$$\begin{array}{r} 1\ 1 \\ 168 \\ 174 \\ \hline 342 \end{array}$$

— Copy without sums, add. Then check with sums.

1. 386	249	835	57	\$1.48	\$ .64
<u>245</u>	<u>163</u>	<u>92</u>	<u>78</u>	<u>4.75</u>	<u>.87</u>
631	412	927	135	\$6.23	\$1.51

2. Jim has 235 stamps in one book and 356 stamps in another book. How many stamps has he all together?
3. Jerry has 196 stamps in one book and 219 stamps in another book. How many stamps has he all together?
4. Ed had 256 stamps. His uncle sent him 175 more. How many stamps did he have then?

*Practice for excellence.* Do Practice Set 18, page 318.

# Addition practice

— Copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 357 \\ 463 \\ \hline \end{array}$	$\begin{array}{r} 735 \\ 183 \\ \hline \end{array}$	$\begin{array}{r} 456 \\ 284 \\ \hline \end{array}$	$\begin{array}{r} 467 \\ 446 \\ \hline \end{array}$	$\begin{array}{r} 157 \\ 386 \\ \hline \end{array}$	$\begin{array}{r} 152 \\ 463 \\ \hline \end{array}$	$\begin{array}{r} 789 \\ 201 \\ \hline \end{array}$
2.	$\begin{array}{r} 467 \\ 283 \\ \hline \end{array}$	$\begin{array}{r} 386 \\ 378 \\ \hline \end{array}$	$\begin{array}{r} 367 \\ 482 \\ \hline \end{array}$	$\begin{array}{r} 288 \\ 563 \\ \hline \end{array}$	$\begin{array}{r} 275 \\ 163 \\ \hline \end{array}$	$\begin{array}{r} 754 \\ 165 \\ \hline \end{array}$	$\begin{array}{r} 647 \\ 285 \\ \hline \end{array}$
3.	$\begin{array}{r} 375 \\ 548 \\ \hline \end{array}$	$\begin{array}{r} 560 \\ 295 \\ \hline \end{array}$	$\begin{array}{r} 436 \\ 387 \\ \hline \end{array}$	$\begin{array}{r} 256 \\ 354 \\ \hline \end{array}$	$\begin{array}{r} 170 \\ 483 \\ \hline \end{array}$	$\begin{array}{r} 275 \\ 718 \\ \hline \end{array}$	$\begin{array}{r} 283 \\ 675 \\ \hline \end{array}$

— Copy, add, and check.

4.	$\begin{array}{r} \$4.00 \\ 3.00 \\ \hline \end{array}$	$\begin{array}{r} \$4.39 \\ 2.73 \\ \hline \end{array}$	$\begin{array}{r} \$ .67 \\ .52 \\ \hline \end{array}$	$\begin{array}{r} \$1.04 \\ .76 \\ \hline \end{array}$	$\begin{array}{r} \$1.25 \\ 1.25 \\ \hline \end{array}$	$\begin{array}{r} \$ .98 \\ .43 \\ \hline \end{array}$	$\begin{array}{r} \$ .05 \\ .07 \\ \hline \end{array}$
5.	$\begin{array}{r} \$ .76 \\ .54 \\ .32 \\ \hline \end{array}$	$\begin{array}{r} \$1.76 \\ .24 \\ 2.46 \\ \hline \end{array}$	$\begin{array}{r} \$1.73 \\ 1.24 \\ .59 \\ \hline \end{array}$	$\begin{array}{r} \$4.50 \\ 5.04 \\ 6.30 \\ \hline \end{array}$	$\begin{array}{r} \$5.60 \\ 3.80 \\ 4.30 \\ \hline \end{array}$	$\begin{array}{r} \$ .04 \\ .74 \\ .69 \\ \hline \end{array}$	$\begin{array}{r} \$1.00 \\ 2.00 \\ 2.00 \\ \hline \end{array}$

	<i>a</i>	<i>b</i>	<i>c</i>
6.	$\$2.46 + \$3.75$	$\$4.36 + \$3.75$	$\$2.84 + \$3.65$
7.	$\$2.86 + \$5.54$	$\$2.87 + \$4.65$	$\$9.04 + \$4.03$

8. Find the additions that are wrong and correct them.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
$\begin{array}{r} \$1.25 \\ 1.30 \\ \hline \$2.55 \end{array}$	$\begin{array}{r} \$ .20 \\ .70 \\ \hline \$ .90 \end{array}$	$\begin{array}{r} \$ .48 \\ .50 \\ \hline \$ .98 \end{array}$	$\begin{array}{r} \$ .75 \\ .50 \\ \hline \$1.25 \end{array}$	$\begin{array}{r} \$1.68 \\ .50 \\ \hline \$3.18 \end{array}$	$\begin{array}{r} \$ .63 \\ 1.74 \\ \hline \$1.37 \end{array}$	$\begin{array}{r} \$ .84 \\ .99 \\ \hline \$1.83 \end{array}$

*Practice for excellence.* Do Practice Set 19, page 318.



# Keeping up in arithmetic

## Oral

1. What will the date be a week from today?
2. Count by 3's to 30; by 4's to 40; by 5's to 50.
3. Name the months of the year in order.
4. Add 7 to each of the numbers below. Then add 8.  
15    36    24    41    77    89    65    58
5.  $9 + 8$  equals the same number as  $10 + \underline{\quad}$ .
6. Read these: III    VI    X    IV    IX    VII
7. Is  $81 + 49 + 30$  nearer to 150, 160, or 170?
8. Is  $98 - 31$  nearer to 50, 60, or 70?
9. 9 dimes and 8 cents = 8 dimes and  $\underline{\quad}$  cents.
10. 6 dimes and 15 cents =  $\underline{\quad}$  dimes and 5 cents.
11. 8 tens and 3 ones = 7 tens and  $\underline{\quad}$  ones.
12. 5 tens and 19 ones = 6 tens and  $\underline{\quad}$  ones.

## Written

1. What part of a peanut bar does each boy get when it is shared equally by 2 boys? 3 boys? 4 boys?
2.  $6 + 5 + 4 + 8 = \underline{\quad}$
3.  $16 + 32 + 8 = \underline{\quad}$
4.  $219 + 194 = \underline{\quad}$
5.  $\$3.46 + \$2.35 = \underline{\quad}$
6.  $\$.78 + \$.65 = \underline{\quad}$
7.  $\$1.42 + \$2.85 = \underline{\quad}$
8.  $98 - 26 = \underline{\quad}$
9.  $83 - 26 = \underline{\quad}$
10.  $74 - 49 = \underline{\quad}$



## Adding money

Peggy found the cost of her parade outfit. Did she keep the cents points in a straight line? Is her addition correct?

The outfit costs   ?  .

— Find the sum for each shopping list.

1. Shoes, \$4.00; hat, \$2.19; boots, \$1.19.
2. Coat, \$8.98; cap, \$1.29; tie, \$.39.
3. Raincoat, \$4.98; dress, \$3.94; gloves \$1.

4. Jane wished to add \$4.25, \$.03, and \$5.

Here is the way she wrote the addition: —————→

What mistake did she make?

WRONG


$$\begin{array}{r} \$4.25 \\ \quad .30 \\ \underline{\$5.00} \end{array}$$

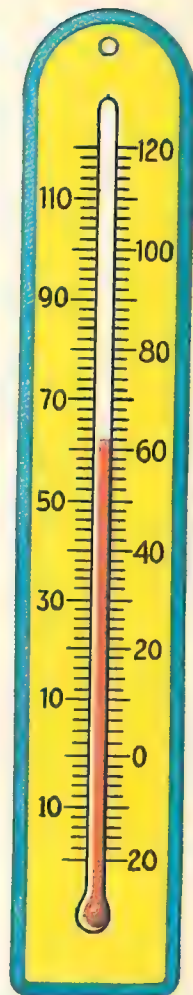
— Write in columns, add, and check. Be sure to put a dollar sign and a cents point in each answer.

- | <i>a</i>                  | <i>b</i>               | <i>c</i>             |
|---------------------------|------------------------|----------------------|
| 5. \$1.98 + \$2.54        | \$3 + \$.25            | \$5 + \$.25 + \$.08  |
| 6. \$.45 + \$1.98         | \$4 + \$.28            | \$7.57 + \$2 + \$4   |
| 7. \$.54 + \$.69 + \$2    | \$2.00 + \$4           | \$6.50 + \$3 + \$.05 |
| 8. \$1.58 + \$.09 + \$4   | \$6 + \$8 + \$.50      | \$4 + \$.40 + \$.04  |
| 9. \$1.02 + \$3 + \$.80   | \$.56 + \$.30 + \$4    | \$4.25 + \$3 + \$.50 |
| 10. \$.65 + \$.12 + \$.21 | \$5 + \$3 + \$15       | \$.60 + \$.06 + \$6  |
| 11. \$2.75 + \$.63 + \$3  | \$1.27 + \$.98 + \$5   | \$.11 + \$8.08 + \$3 |
| 12. \$7 + \$.83 + \$2.57  | \$9.07 + \$.44 + \$.16 | \$4 + \$.32 + \$5.06 |

*Practice for excellence.* Do Practice Set 20, page 318.

## Problems to solve

1. There are 23 boys and 17 girls in a class. Each needs a paintbrush. How many brushes are needed?
2. Don earned \$.75. He is going to spend \$.59 for a knife. How much will he have left?
3. Paul would like to buy a magnet that costs \$.50. He has \$.23. How much more does he need?
4. Ed has 9 eggs. He needs   ?   more to make a dozen.
5. Susan had 63¢ in her bank. She put in 2 dimes and a nickel. How much did she have in her bank then?
6. Bob made a boat 19 inches long. Billy's boat is 7 inches longer. How long is Billy's?
7. Alice weighed 49 pounds in September. Since then she has gained 4 pounds. How much does she weigh now?
8. Ski pants cost \$7.50. Ski boots cost \$8.49. How much will Judy spend to buy the pants and boots?
9. At 7 A.M. the temperature was 54°. At noon the thermometer looked like this:  How much did the temperature rise?
10. How much change will you get from a quarter if you spend 6¢?
11. Find the cost of two model planes at \$.59 each.
12. Chris mailed his Christmas cards a week before Christmas. On what date did he mail them?
13. Jim changed 2 dollars into   ?   dimes.
14. At what time is Molly putting cookies in the oven? The cookies should bake 15 minutes. When should she take them out?





# What you should know

— Add down. Check by adding up.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	4	84	27	8	\$.75	\$4.25	\$5.94
	8	37	36	69	.69	5.49	6.52
	<u>7</u>	<u>12</u>	<u>35</u>	<u>54</u>	<u>.25</u>	<u>.36</u>	<u>1.65</u>

— Subtract and check.

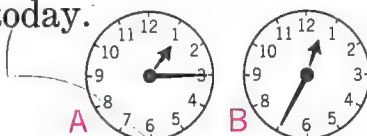
2.	78	69	74	71¢	\$.84	\$.92	\$.75
	<u>43</u>	<u>42</u>	<u>49</u>	<u>29¢</u>	<u>.56</u>	<u>.75</u>	<u>.28</u>

— Tell the missing numbers.

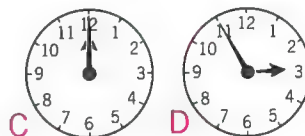
- |                          |                        |                        |
|--------------------------|------------------------|------------------------|
| <i>a</i>                 | <i>b</i>               | <i>c</i>               |
| 3. 1 yd. = <u>  </u> ft. | 1 qt. = <u>  </u> pt.  | 1 hr. = <u>  </u> min. |
| 4. 1 ft. = <u>  </u> in. | 1 pt. = <u>  </u> cups | 1 da. = <u>  </u> hr.  |
| 5. 1 yd. = <u>  </u> in. | 1 gal. = <u>  </u> qt. | 1 yr. = <u>  </u> mo.  |

6. Write the date for today; a week from today.

7. What time is it by each of these clocks?



8. How much change will you get from a quarter if you spend 22¢? 20¢? 15¢? 10¢?



9. What part of an apple will each boy get if 2 boys share it equally? 3 boys? 4 boys?

10. 642 =    hundreds    tens    ones.

11.  $7 + 7 = 14$  shows there are 14 days in 2 weeks.  
How can you show how many days there are in 3 weeks?

12.  $86¢ = 8 \text{ dimes } 6 \text{ cents} = 7 \text{ dimes } \underline{\hspace{1cm}} \text{ cents.}$

13. 19 dimes =    dollar and    dimes.

## Sensible answers


No  please. Just estimate each answer.

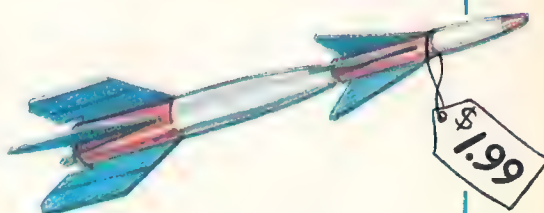
Problem  
solving  
help

1. Jerry wants a ball that costs 49¢ and a bat that costs 98¢. He thought, “The ball costs about 50 cents and the bat costs about   ?  , so both will cost about   ?  .”

2. It takes 3 yards of gingham to make a dress for Alice. The gingham Alice wants costs 49¢ a yard. Alice thought, “49¢ is about   ?  , so 3 yards will cost about   ?  .”

3. Alice would like to have a silk dress. The silk she wants costs 98¢ a yard. She needs 3 yards. About how much would the silk for her dress cost?

4. Tom earned \$3.03 last week. If he buys this rocket, about how much money will he have left? 



5. Jean earned 53¢ last week. She hopes to earn a half dollar this week. If she does, she will have about   ?   all together.

6. John has a dollar. If he buys one of these knives, about how much will he have left?



— In the following examples, estimate the answer. Then check the estimate by measuring.

7. About how tall is your desk? your teacher?

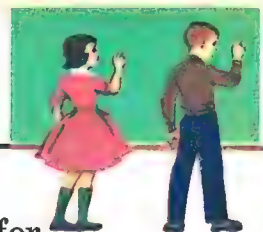
8. About how long is your teacher's desk? a new pencil?

9. Name something in your schoolroom that would hold about 2 quarts.

10. About how heavy is your arithmetic book?



# PROBLEM TEST 4



1. Bobby is making a chest. He spent 37¢ for hinges and 59¢ for a lock. He spent   ?   in all.
2. In the "Lost and Found" box there are 15 black pencils and 7 colored. How many pencils are in the box?
3. Ted saw a magnet marked 39¢. He has a quarter. To buy the magnet, he needs   ?  ¢ more.
4. Jane bought a coat for \$9.98 and a hat for \$2.50. How much did Jane's new clothes cost?
5. Bob had \$4.65 in the school bank. He has just put in \$1.75 more. He now has   ?   in the bank.
6. Tom has 6 dimes and 7 pennies. He saw a 49-cent puzzle. If he buys it, how much will he have left?
7. On February 9 Alice said, "A week from today will be my birthday." Alice's birthday comes on February   ?  .
8. When the thermometer falls from 13° to 6°, the air becomes   ?   degrees colder.
9. The picture shows how much milk Jerry's cow gave this morning.  
The cow gave   ?   quarts.
10. Molly wants new curtains for her room. They should be 1 yard 18 inches long. She can buy curtains 54 inches long or 63 inches long. Which ones should she buy?

Write your score on your Problem Test Record.

Think twice!

On December 22 Scotty said, "A week from today is my birthday." Between what two holidays does his birthday come?



# IT'S CHECK-UP TIME



Add and check:

1. $\begin{array}{r} \$2.45 \\ 1.34 \\ \hline \end{array}$	2. $\begin{array}{r} \$3.46 \\ 5.38 \\ \hline \end{array}$	3. $\begin{array}{r} \$4.76 \\ .25 \\ 1.34 \\ \hline \end{array}$
--	--	---

4. Find the sum and check:  $\$6 + \$3.34 + \$3.05$ .
5. Is 769 closer to 700 or to 800?
6. Janet has 1 half dollar, 1 quarter, 2 dimes. How much money has she in all?
7. Which would be a sensible price for a quart of milk?  
 $\$.05$                        $\$.25$                        $\$.50$                        $\$.75$
8. Joe has  $\$7.95$ . He is buying skates for  $\$4.05$ . Do you estimate he will have about  $\$4.00$  left, about  $\$3.00$  left, or about  $\$2.00$  left?
9. Scotty had  $\$4.35$ . He earned  $\$.75$  more. How much did he have then?
10. Find the cost of 2 cartons of dog food at  $\$1.29$  each.

If you have time, try these –

11.  $\$3.75 + \$4.62 = \$8.37$ , so  $\$8.37 - \$4.62 = \underline{\quad ? \quad}$ .
12. Find what number N stands for.  
 $N - \$2.35 - \$1.00 = \$4.50$ .

J U S T F O R F U N



- Jane is 5 years old. The difference between her age and Bill's age is 4 years.  
How old is Bill? Be careful!
- Tom's birthday is three weeks from today. Write the date of his birthday.



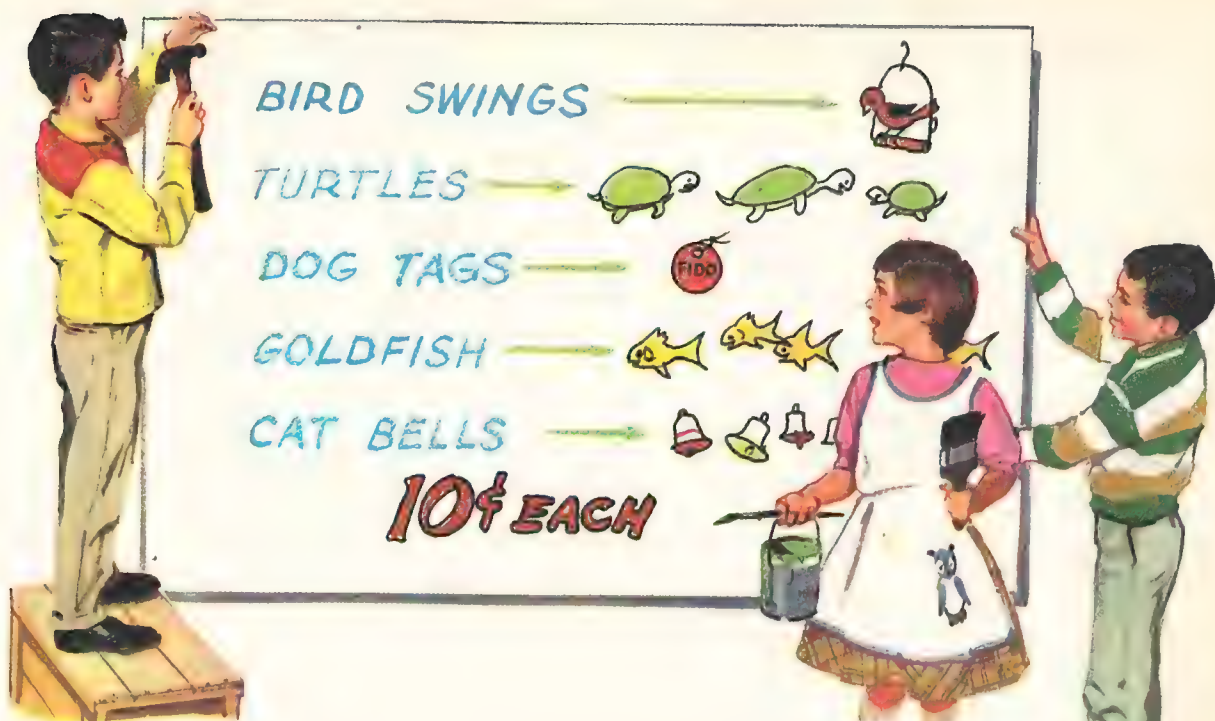
## Using dimes

Miss Martin's class is having a pet show. The children are selling tickets for 10¢ each.

1. Use dimes to show the cost of: 1 ticket; 2; 4; 6; 8; 10.
2. Read the table below and tell the missing numbers. Begin this way: "1 ticket costs 10¢; 2 tickets cost 20¢"; and so on.

TICKETS	1	2	3	4	5	6	7	8	9	10
CENTS	10	20	30	40	?	?	?	?	?	?

3. Without looking at the table, tell how much these numbers of tickets will cost: 7 6 3 2 8 5 9 10



4. Look at the picture. What are the children selling at the pet show? Each thing sells for   ¢.

5. How much should Ann pay for three bird swings?

6. How much will five turtles cost?

7. Dick sold eight dog tags. How much money did he get for them?

8. Peter sold six goldfish. How much did he get for them?

9. Sue has a dime and two nickels. Has she enough to buy two cat bells?

10. Tom has a quarter and a dime. Has he enough to buy three turtles? more than enough?

11. Joe gave two quarters for four turtles and a cat bell. Was that enough?



# How many dimes?



TRY  
IT

- How many piles of 10 pennies each can you make with 20 pennies; 30 pennies; 40 pennies?
- How many dimes do you need to make 50¢; 70¢; 90¢?

1. Pet Show tickets sold for 10¢ each. Use dimes to show how many tickets you could get for: 20¢ 30¢ 40¢ 50¢ 60¢ 70¢ 80¢ 90¢ \$1.00 (100¢)

2. Read the table below and tell the missing numbers. Begin this way: "For 10¢, 1 ticket; for 20¢, 2 tickets."

CENTS	10	20	30	40	50	60	70	80	90	100
TICKETS	1	2	3	4	?	?	?	?	?	?

3. Practice until you can tell without looking at the table how many 10-cent tickets you get for:

20¢ 40¢ 10¢ 30¢ 50¢ 80¢ 60¢ 70¢

4. 5 tickets cost ?¢; for 50¢ you can buy ? tickets.

5. 7 tickets cost ?¢; for 70¢ you can buy ? tickets.

6. 9 tickets cost ?¢; for 90¢ you can buy ? tickets.



7. How many 10-cent turtles can Joe get for 40¢?

8. Jack has 30¢. How many 10-cent goldfish can he get?

9. How many 10-cent bells can Doris get for a half dollar? a dollar?

10. To buy a 60-cent dog collar, Danny paid ? dimes.

## Getting change

1. Jack gave John a quarter for one 10-cent ticket.  
How much change should Jack get?

25¢

2. Ann gave John a quarter for two 10-cent tickets.  
How much did the tickets cost?

-10¢

Ann should get back   ?  ¢.

3. Betsy bought four 10-cent tickets. How much did her tickets cost? She gave John a half dollar.

Betsy should have   ?  ¢ change.

4. Don bought two 10-cent tickets. He got   ?  ¢ change from a half dollar.

5. What change will you get from a quarter if you buy one 10-cent ticket? 2 tickets?

6. What change will you get from a half dollar when you buy one 10-cent ticket? 3 tickets? 5 tickets? 2 tickets?

7. What change will you get from a dollar when you buy five 10-cent tickets? 8 tickets? 9 tickets? 4 tickets? 6 tickets? 7 tickets?

8. Alice has a quarter and a dime. That is   ?  ¢.

Alice wants three 10-cent tickets. The tickets will cost   ?  ¢. She will get   ?  ¢ change.

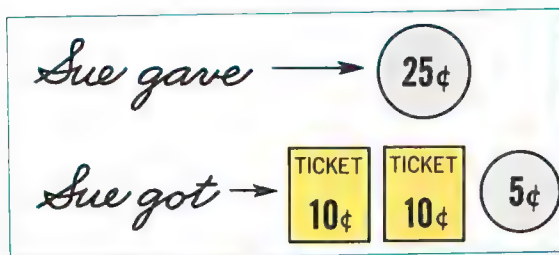
9. Tell about the last time you went shopping.

- What did you buy?
- What did it cost?
- How much money did you give the clerk?
- How much change did you get?

10. Why should you always count your change?

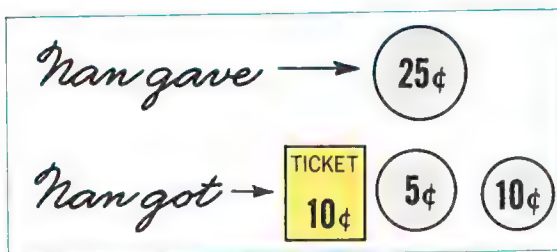


## Giving change



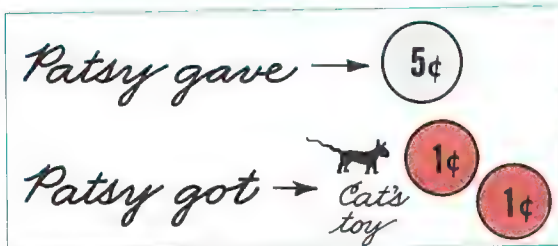
1. Sue gave Rusty a quarter for two 10-cent tickets.

Rusty said, "Two tickets, 20¢." Then he gave a nickel and said, "25¢."



2. Nan gave Rusty a quarter for a 10-cent ticket.

Rusty said, "One ticket, 10¢." He gave a nickel and said, "15¢." He gave a dime and said, "25¢."



3. Patsy gave Don a nickel to pay for a 3-cent toy for her cat.

Don said, "One toy, 3¢." He gave a cent and said, "4¢." He gave a cent and said, "5¢."

4. Tell how to count the change if you spend 7¢ out of a dime.

TRY IT

- Use coins and give change from a nickel when someone spends: 1¢      2¢      3¢      4¢

- Give change from a dime when someone spends:

6¢    7¢    8¢    9¢    1¢    2¢    3¢    4¢    5¢

- Give change from a quarter when someone spends:

21¢            17¢            12¢            8¢            5¢

22¢            16¢            14¢            7¢            4¢

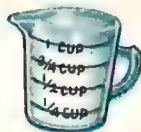
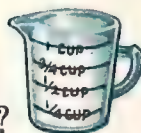
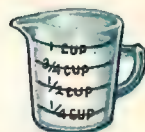
24¢            19¢            11¢            6¢            3¢



# Keeping up in arithmetic

## Oral

1. Are three cups of milk more or less than a pint?
2. Is your teacher's desk longer than a yard?
3. Is the length of your book more or less than a foot?
4. Is a foot more than 10 inches?
5. 20 dimes = ? dollars.
6. 90 minutes is how much more than an hour?
7. Is  $250 + 300$  more or less than  $250 + 267$ ?
8. One pencil costs a dime. 6 pencils will cost ?.
9.  $5 + 8 = 13$ ; so  $15 + 8 = \underline{\quad}$  and  $25 + 8 = \underline{\quad}$
10. Is  $\$4.06 + \$3.10 + \$4.00$  closer to \$11 or \$12?



## Written

1.  $\$1.42 + \$1.16 + \$3.32 + \$0.08 = \underline{\quad}$     2.  $\$.76 - \$.27 = \underline{\quad}$
3. Billy's airplane is one foot long. Dick's is 16 inches long. How much longer is Dick's plane than Billy's?
4. An arithmetic lesson started at quarter after ten. It lasted 40 minutes. At what time was it over?
5. How much will two bird houses cost at \$1.19 each?
6. How many dimes can you get for a half dollar?
7. Write the missing number.    200    220    ?    260
8. 1 pound 9 ounces is ? ounces in all.
9. 2 gallons 3 quarts is ? quarts in all.
10. From April 9 to April 23 is ? days.



# Changing nickels to pennies



Dick said, "Today is my birthday! I'll treat everybody in the class to a candy marble."

"There are 20 of us," said Fred, "Do you have 20 pennies to put into the slot?"

Dick answered, "I have 4 nickels that I can change to pennies."

Dick laid the 4 nickels in a row like this.



He pointed to them in order, saying, "5, 10, 15, 20."

Dick's 4 nickels were worth   ?   pennies. Was that enough to get each child a candy marble?



- Use coins to find how many pennies you can get for:

2 nickels

3 nickels

5 nickels



- Use this picture to find how many pennies you can get for:  
6 nickels   7 nickels   8 nickels   9 nickels   10 nickels
- 6 nickels and 3 pennies equal   ?   cents.

1. Read this table and tell the missing numbers.

Begin: "For 1 nickel I can get 5 pennies"; and so on.

NICKELS	1	2	3	4	5	6	7	8	9	10
PENNIES	5	10	15	20	?	?	?	?	?	?

Problem  
solving  
help

2. Without using the table tell how many pennies you get for 3 nickels; 6 nickels; 9; 2; 5; 8; 1; 4; 7; 10.

3. If 1 toy costs a nickel, how much will 4 toys cost?

Think: If 1 toy costs a nickel, 4 toys will cost 4 nickels.

Four nickels equal ? cents.

4. If 1 ball costs a nickel, how much will 5 balls cost?

Think: If 1 ball costs a nickel, 5 balls will cost 5 nickels.

Five nickels equal ? cents.

5. If 1 ice-cream cone costs a nickel, how much will 8 cost?

Think: If 1 cone costs a nickel, 8 cones will cost 8 nickels. Eight nickels equal ? cents.

6. At a toy sale, each toy was sold for a nickel. Tell how you would find the cost of:

3 balls      7 tops      6 cars      5 planes      8 boats

Think twice!

Make up a rule to use in the examples below. Then tell the missing numbers.

- 3 nickels = 15 cents, so 6 nickels = ? cents.
- 4 nickels = 20 cents, so 8 nickels = ? cents.
- 5 nickels = 25 cents, so 10 nickels = ? cents.
- 10 nickels = 50 cents, so 20 nickels = ? cents.





## Changing pennies to nickels

Dan, Sue, and Paul wanted a 5-cent grape drink. For each drink they had to put a nickel into the slot.

They had no nickels, but Dan had 15 pennies. Here is the way he laid out the pennies:



Dan said, "For the first 5 pennies I'll get a nickel. For the next 5 pennies I'll get another nickel," and so on.

1. Dan can get   ?   nickels for 15 pennies. Is that enough to buy a drink for Sue, Paul, and himself?
2. Use coins to show how many nickels you can get for 5 pennies; 10 pennies; 15; 20; 25; 30.
3. Read the table below and tell the missing numbers. Begin: "For 5 pennies I get 1 nickel; for 10 pennies I get 2 nickels"; and so on.

PENNIES	5	10	15	20	25	30	35	40	45	50
NICKELS	1	2	3	4	5	?	?	?	?	?

4. Without using the table tell how many nickels you can get for 35 pennies; 40; 45; 50; 30; 15; 5; 20; 10.

5. If 1 ball costs a nickel, how many can you get for 20¢?



Think: One ball costs a nickel;  $20¢ = 4$  nickels. So for 20¢ you can get 4 balls.

6. If 1 balloon costs a nickel, how many balloons can you get for 25¢?



Think: One balloon costs a nickel.  $25¢ = 5$  nickels. So for 25¢ you can get 5 balloons.

7. If 1 top costs a nickel, how many can you get for 15¢?

Think: One top costs a nickel.  $15¢ = \underline{\hspace{1cm}}$  nickels. So for 15¢ you can get 3 tops.

— Tell what you think when you solve these problems.

8. If 1 apple costs a nickel, how many apples can you get for 20¢? 35¢? 45¢? 40¢?

9. How many nickels can you get for a quarter?

10. Peter said, "I'll trade you 35 pennies for 7 nickels." Would that be a fair trade?

Think twice!

11. John has saved 23 pennies. How many nickels can he get? Will he have any pennies left over?

12. Tom has 46¢. Jane has 8 nickels. Who has more? How much more?

Problem  
solving  
help



## Problems to solve

Problem  
solving  
help

If you have trouble with Problem 1 below, do Problem 1 on page 183. It is easier. Then come back and try Problem 1 below again, and so on.

1. Jane wants a box of crayons for 25¢ and a coloring book for 12¢. How much will both cost?
2. Ann wants to buy a 49-cent box of crayons. She has only 23¢. How much more money does she need?
3. Susan is going to Chicago on February 16. She will stay a week. On what date will she come home?
4. Tom has \$.75. If he buys one of these balls, how much will he have left?
5. Carl has 97 stamps. Jerry has 67 stamps. How many more stamps has Carl than Jerry?
6. Alice has a quarter, a dime, and eight pennies in her bank. How much money has she?
7. Mary said, "I need only 28 inches of this yard of ribbon." How many inches of ribbon will be left?
8. Dick wants to buy a winter cap for \$2.39 and mittens for \$.79. How much does he need for both?
9. Don can get a knife for 69¢ or one for 85¢. How much will he save if he buys the cheaper knife?
10. Bob has 132 stamps in his book of United States stamps and 249 stamps in his book of stamps from other countries. How many stamps has he in both books?
11. Do an addition to find how much money these three stamps are worth.





## Easier problems to solve

If you had every problem on page 182 correct, you may skip this page.

Write the addition or subtraction fact you use to find the answer to each problem below.

1. Jane buys an ice cream cone for 5¢ and a lollipop for 1¢. How much does she pay for both?

2. Ann wants to take 6 cents to school. She has 4 cents. How many more cents does she need?

3. How many days are there in a week? What date is

- a week from February 2?      • a week from February 3?
- a week from February 4?      • a week from February 5?

4. If Tom spends 2¢ of his nickel, how much will he have left?

5. Carl has 5 tops. Jerry has 2 tops. How many more tops has Carl than Jerry?

6. Alice has 3 red crayons, 2 blue ones, and 4 green ones. How many crayons has she all together?

7. Mary said, "I need only 7 inches of this 10-inch piece of ribbon." How many inches of ribbon will be left?

8. Dick wants to buy a ball for 5¢ and a pencil for 2¢. How much money does he need for both?

9. Don can get a pencil for 10¢ or one for 5¢. How much does he save if he buys the cheaper pencil?

10. Bob has 3 marbles in one pocket and 6 marbles in the other pocket. How many marbles has he?

11. Do an addition to find the cost of two of these candy bars.

Problem  
solving  
help





## Thinking about hundreds

1. Ted said, "I'll give ten marbles to the one who makes the best guess of the number of marbles in this bag."

- Tom guessed 290      • Jack guessed 286
- Jean guessed 215      • Sally guessed 268

There are 275 marbles in the bag. Who won?

2. Count by 100's from 100 to 1,000; from 18 to 518.

3. Tell the number that is:

- 100 more than 198    100 more than 610    100 less than 888
- 100 more than 52    100 more than 3    100 less than 505

4. Write these numbers in order, from the smallest to the largest:

460      604      697      523      700      532      275

5. What does the 6 mean in 624? in 264? in 246?

6. Using a 2, a 7, and a 5, write the largest number you can; the smallest number.

7. \$1.00 = 1 half dollar and   ?   quarters.

8. \$3.00 = 2 dollars and   ?   quarters.

9. \$4.00 = 3 dollars and   ?   dimes.

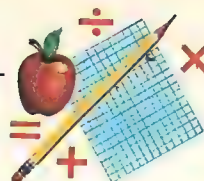
10. \$5.75 = 5 dollars, 7 dimes, and   ?   cents.

11. Write your house number; your telephone number. Read them.

12. Read these numbers. Then write the numbers as your teacher says them.

629	407	770	666	193	420	576	789
504	960	831	909	139	382	805	640
432	509	680	890	208	476	970	999

## SELF-HELP TEST 7



— Add and check:

$$\begin{array}{r} 1. \ 7 \\ 8 \\ \hline 9 \end{array} \quad [126]$$

$$\begin{array}{r} 2. \ 30 \\ 30 \\ \hline 20 \end{array} \quad [77]$$

$$\begin{array}{r} 3. \ 58 \\ 5 \\ \hline 27 \end{array} \quad [127]$$

$$\begin{array}{r} 4. \ 469 \\ 327 \\ \hline \end{array} \quad [157]$$

$$\begin{array}{r} 5. \ 46¢ \\ 32¢ \\ \hline \end{array} \quad [66]$$

$$\begin{array}{r} 6. \ 456 \\ 487 \\ \hline \end{array} \quad [163-164]$$

$$7. \ \$1.85 + \$4.63 \quad [160]$$

$$8. \ \$7 + \$0.36 + \$2.75 \quad [166]$$

— Subtract and check:

$$\begin{array}{r} 9. \ 155 \\ 62 \\ \hline \end{array} \quad [88]$$

$$\begin{array}{r} 10. \ 86 \\ 37 \\ \hline \end{array} \quad [111-112]$$

$$11. \ 145 - 59 \quad [112]$$

$$12. \ \$0.90 - \$0.36 \quad [113]$$

## SELF-HELP TEST 8



1. Tom has 2 dollar bills, a half dollar, and a nickel. Write the amount of money he has. [57]

2. Nancy is making muffins that need to bake 20 minutes. If she puts them in the oven at 10 minutes after 8, when should she take them out? [41-42]

3. Al earned \$.49. Jerry earned \$.85. Who earned more? How much more? [113]

4. There are 348 children in the West Side School and 483 children in the Park Street School. To give each child in both schools a pencil, ? pencils are needed. [163-164]

5. What number does N stand for:  $N + 9 = 15$  [93]

6. 14 tens = 1 hundred ? tens. [85]

7. For 90¢ you can get ? 10-cent cards. [174]

8. What is the date a week from today? [140]



## IT'S CHECK-UP TIME



1. Write these numbers in order beginning with the smallest: 705    507    750    570
2. Write the number that is 200 more than 7.
3. 13 dimes = 1 dollar and   ?   dimes.
4. Susan bought three 10-cent toys. She paid for them with a half dollar. She got two coins in change. What coins did Susan get?
5. This picture shows that 20 pennies =   ?   nickels.



6.  $5¢ + 5¢ + 5¢ + 5¢ + 5¢ + 5¢ = 30¢$ .  
This addition shows that   ?   nickels = 30¢.
7. Which of these does not equal 40¢?
  - 4 dimes
  - 10¢ + 10¢ + 10¢ + 10¢
  - 8 nickels
  - 1 quarter + 3 nickels
  - 2 quarters
  - 1 quarter + 1 dime + 1 nickel
8. How many 10-cent balloons can you get for \$1.00?
9. There are 347 children in Wilson School and 468 in Adams School. In the two schools there are   ?   children.
10. Would three pairs of socks at 98¢ a pair cost about \$2.00, about \$3.00, or about \$4.00?

**If you have time, try these –**

11. 2 quarters +   ?   dimes + 4 nickels = \$1.00.
12. Jim had three dollars changed into dimes. How many dimes did he get?



## Multiplying fives

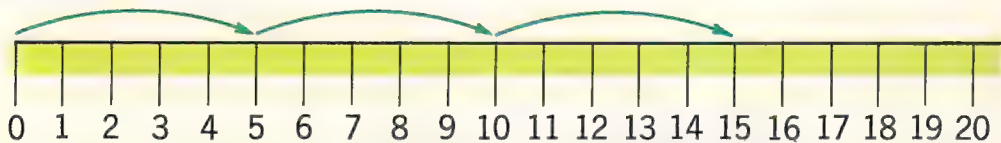
Joy, Dan, and Sue each made a puppet.

Joy said, "My puppet needs 2 strings for the arms, 2 strings for the legs, and 1 string for the head, or 5 strings in all."

Dan said, "For the three puppets we need 5, 10, 15 strings all together."

Sue said, "That's right.  $5 + 5 + 5 = 15$ ."

Joy drew a number line. With a green pencil she marked off three 5's.



Joy said, "My number line shows that three 5's are 15. So three groups of 5 strings are 15 strings."

Saying "5, 10, 15" is counting to find three 5's.

Saying " $5 + 5 + 5 = 15$ " is adding to find three 5's.

Saying "Three 5's are 15" is *multiplying* to find three 5's.

Joy did a *multiplication* example. She multiplied 5 by 3.

*Multiplication* is usually the shortest way to put equal groups together.

How many equal groups did Joy put together in her multiplication? What was the size of each group?



## More about fives

1. Look at Donna's cookies. There are 5 cookies in each row.

How many rows are there?

2. Count the cookies by 5's. Your counting shows that 10 fives are   ?  .

3. How many cookies are there in 2 rows? 3? 4? 5? 6? 7? 8? 9? 10?

4. Find the answers in Exercise 3 by adding.

— Find these answers in as many ways as you can.

*a*

5. Two 5's are   ?  .

6. Three 5's are   ?  .

7. Five 5's are   ?  .

*b*

Four 5's are   ?  .

Six 5's are   ?  .

Seven 5's are   ?  .

*c*

Eight 5's are   ?  .

Nine 5's are   ?  .

Ten 5's are   ?  .

8. John did 3 rows of examples. There were 5 examples in each row. In all, he did   ?   examples. 3 fives are   ?  .

9. Mrs. Jones has 6 children. She gave each of them 5 cents. In all, she gave them   ?   cents. 6 fives are   ?  .

10. Find the cost of 8 apples at 5¢ each. 8 fives are   ?  .

Think twice!

— Do not use a pencil.

11. How much more is 12 fives than 10 fives?

12. Which is more, 12 fives and 10, or 13 fives?



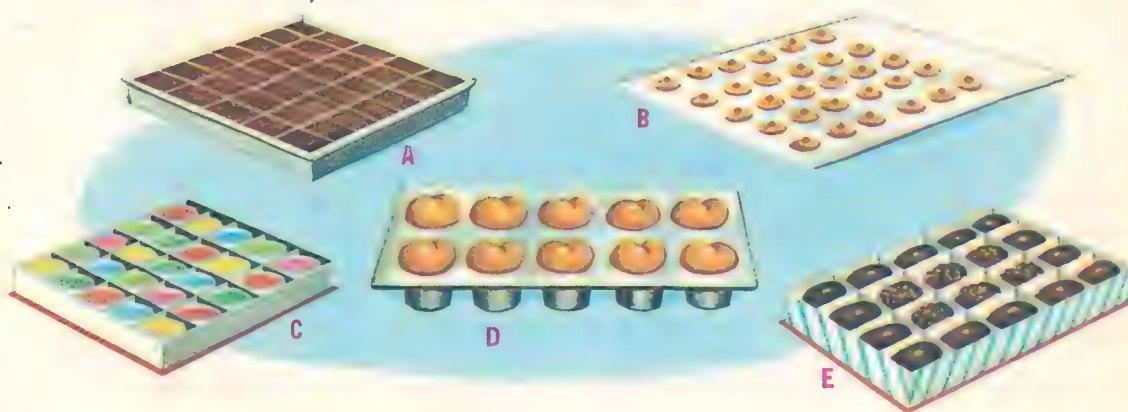
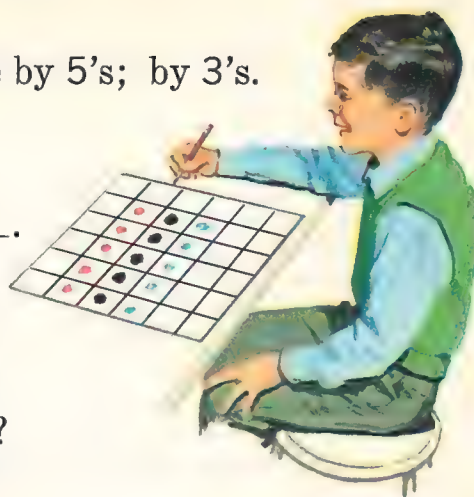
# Pairs of multiplication facts

1. Count the dots in Lenny's picture by 5's; by 3's.

- Can you see 3 fives?
- Can you see 5 threes?
- 3 fives are   ?  ; 5 threes are also   ?  .

2. Which picture below shows these pairs of facts:

- 2 fives are 10, and 5 twos are 10?
- 4 fives are 20, and 5 fours are 20?
- 6 fives are 30, and 5 sixes are 30?
- 7 fives are 35, and 5 sevens are 35?



- On squared paper draw a dot picture to show:

5 fives are 25

8 fives are 40, and 5 eights are 40

9 fives are 45, and 5 nines are 45

- Put your pictures in your Arithmetic Folder.
- Make a list of things you see that show multiplication facts of fives. Write the facts each picture shows. Keep your list in your Arithmetic Folder.

TRY  
IT

# The multiplication sign

Jim went to the store 3 times. He spent 5¢ each time.  
To find how much he spent, we use a *multiplication fact*.

We say: "Three 5's are 15," or "3 *times* 5 is 15."

We write the multiplication fact this way:  $3 \times 5 = 15$ .

The sign  $\times$  tells you to *multiply*.  
It is often called the *times* sign.



Use counters to show that:

$$3 \text{ times } 5 = 15$$

$$\text{Three } 5\text{'s} = 15$$

$$3 \times 5 = 15$$

$$5 \text{ times } 3 = 15$$

$$\text{Five } 3\text{'s} = 15$$

$$5 \times 3 = 15$$

1. Read each of these multiplication facts in two ways.

$$1 \times 5 = 5$$

$$6 \times 5 = 30$$

$$5 \times 1 = 5$$

$$5 \times 6 = 30$$

$$2 \times 5 = 10$$

$$7 \times 5 = 35$$

$$5 \times 2 = 10$$

$$5 \times 7 = 35$$

$$3 \times 5 = 15$$

$$8 \times 5 = 40$$

$$5 \times 3 = 15$$

$$5 \times 8 = 40$$

$$4 \times 5 = 20$$

$$9 \times 5 = 45$$

$$5 \times 4 = 20$$

$$5 \times 9 = 45$$

$$5 \times 5 = 25$$

$$10 \times 5 = 50$$

$$5 \times 5 = 25$$

$$5 \times 10 = 50$$

2. Write these multiplications, using the times sign.

7 fives are 35    2 fives are 10    8 fives are 40    6 fives are 30

*a*

*b*

3.  $2 \times 5 = 10$ , so  $4 \times 5 = 20$ .

$4 \times 5 = 20$ , so  $8 \times 5 = \underline{\quad ? \quad}$ .

4.  $3 \times 5 = 15$ , so  $6 \times 5 = \underline{\quad ? \quad}$ .

$5 \times 5 = 25$ , so  $10 \times 5 = \underline{\quad ? \quad}$ .

— Write the answers.

5.  $7 \times 5$

$1 \times 5$

$5 \times 3$

$5 \times 5$

$5 \times 8$

$5 \times 6$

6.  $5 \times 4$

$9 \times 5$

$2 \times 5$

$7 \times 5$

$6 \times 5$

$8 \times 5$

# Multiplication facts of fives

Here is a new way to write "2 times 5 is 10."



$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

1. Read the multiplication facts of fives below.  
Say, "1 times 5 is 5; 2 times 5 is 10;" and so on.

## Multiplication Facts of Fives

$\begin{array}{r} 5 \\ \times 1 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline 20 \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline 35 \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline 40 \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline 45 \end{array}$
--	---	---	---	---	---	---	---	---

$\begin{array}{r} 1 \\ \times 5 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline 35 \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$
--	---	---	---	---	---	---	---	---

— Practice Exercises 2 and 3 until you can say every answer.

2.  $\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$   $\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$

3.  $\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$   $\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$   $\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$   $\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$

4. Copy Exercises 2 and 3 and write the answers. Make and study Help-Yourself Cards for each fact you do not know.

5. Find the cost of five of these candy bars.

6. Five gallons = ? quarts.



— Write the fact you use to find the cost of these toys.  
Each toy costs 5¢.

7. 2 balls

8 kites

5 dolls

7 boats

8. 10 balloons

6 paper caps

4 cars

9 planes



## Using multiplication facts of fives

1. Ray bought 5 bags of marbles. There are 6 marbles in each bag. How many marbles did he buy all together?

Think: There are 6 marbles in each bag. In 5 bags there are 5 times 6 marbles, or  $\underline{\quad}$  marbles.  $5 \times 6 = \underline{\quad}$

2. Find the cost of 8 apples at 5¢ each.

Think: One apple costs 5¢, so 8 apples will cost 8 times 5¢, or  $\underline{\quad}$ ¢.  $8 \times 5 = \underline{\quad}$

— Tell what you think as you find the answers.

3. Find the cost of 7 balloons at 5¢ each.

4. Joe bought 8 five-cent pencils. Tom bought 5 eight-cent pencils. How much money did each boy spend?

5. How many days are there in a week? in 5 weeks?

6. How many feet are there in a yard? in 5 yards?

7. How many pints are there in a quart? in 5 quarts?

8. In a box of candy eggs there are 7 rows of eggs. There are 5 eggs in each row. How many eggs are there?

9. One package of egg dye will color 5 Easter eggs. How many eggs can you color with 5 packages of dye?

10. Write the multiplication facts used in Exercises 3 to 9.

Think twice!

Make a dot picture to show that five 4-cent cakes cost just as much as four 5-cent cakes.

Will the dots stand for cents or for cakes?





## Getting ready for division

The children in Miss Adams' room bought a pack of beet seeds. There were 30 seeds in the pack.

1. The children want to plant the seeds in cheese boxes, 5 seeds to a box. How many boxes do they need?

- 2 boxes are not enough;  $2 \times 5$  seeds is only 10 seeds.
- 3 boxes are not enough;  $3 \times 5$  seeds is only 15 seeds.
- Are 4 boxes enough? 5? 6?

What number times 5 seeds equals 30 seeds? They need   ?   boxes.

2. Read the table below and tell the missing numbers. Begin like this: "For 5 seeds you need 1 box; for 10 seeds you need 2 boxes"; and so on.

SEEDS	5	10	15	20	25	30	35	40	45	50
BOXES	1	2	3	?	?	?	?	?	?	?

3. How many boxes do you need for 15 seeds? for 30? for 45? 10? 25? 40? 5? 20? 35? 50?

4. Now read the table like this:

$$5 = \underline{1} \text{ five}$$

$$10 = \underline{2} \text{ fives}$$

$$15 = \underline{?} \text{ fives}$$

$$20 = \underline{?} \text{ fives}$$

$$25 = \underline{?} \text{ fives}$$

$$30 = \underline{?} \text{ fives}$$

$$35 = \underline{?} \text{ fives}$$

$$40 = \underline{?} \text{ fives}$$

$$45 = \underline{?} \text{ fives}$$



# Dividing by 5

How many ways can you think of to find the number of 5-cent balloons you can get for 20¢?

**1** Joe's coins show that in 20¢ there are   ?   groups of 5¢. He can get   ?   5-cent balloons for 20¢.



**2** Ann drew 20¢. Then she drew a balloon for each 5¢. This shows that in 20¢ there are   ?   groups of 5¢. She can get   ?   5-cent balloons for 20¢.



**3** Peter started with 20¢ and bought 5-cent balloons over and over, until he had nothing left.

Explain what he wrote:  $\longrightarrow$

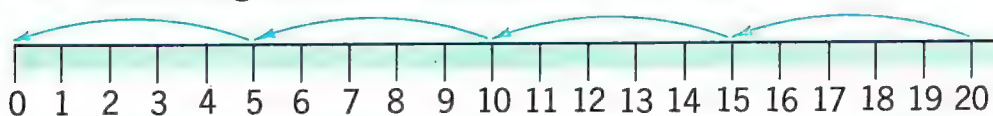
Peter subtracted 5¢   ?   times.

He can buy   ?   5-cent balloons for 20¢.

$$\begin{array}{r} 20¢ \\ -5¢ \\ \hline 15¢ \\ -5¢ \\ \hline 10¢ \\ -5¢ \\ \hline 5¢ \\ -5¢ \\ \hline 0 \end{array}$$

**4** Sue started with 20 and counted back 5. She drew a line to 15. Then what did she do?

Her number line shows that in 20 there are   ?   groups of 5. She can get   ?   5-cent balloons for 20¢.





On page 194 the children each used a different way of finding how many groups of 5 are in 20.

When you find how many groups of 5 are in 20, you are *dividing 20 by 5*.

"20 divided by 5 is 4," is a *division fact*.

You can write it:  $20 \div 5 = 4$ .

The division sign  $\div$  is read "*divided by*."

1. When you find how many groups of 5 are in 15, you are dividing 15 by  $\underline{\quad}$ .  $15 \div 5 = \underline{\quad}$

2. When you find how many groups of 5 are in 10, you are dividing  $\underline{\quad}$  by 5.  $10 \div 5 = \underline{\quad}$

3. Read the division facts in this box.  $\longrightarrow$

$$5 \div 5 = 1$$

$$10 \div 5 = 2$$

$$15 \div 5 = 3$$

$$20 \div 5 = 4$$

$$25 \div 5 = 5$$

$$30 \div 5 = 6$$

$$35 \div 5 = 7$$

$$40 \div 5 = 8$$

$$45 \div 5 = 9$$

TRY  
IT

- Use 30 counters to find the missing number:  $30 \div 5 = \underline{\quad}$ .
- Use 40 counters to find the missing number:  $40 \div 5 = \underline{\quad}$ .
- Use subtraction to find how many 5's are in 35.
- On squared paper, draw a dot picture to show how many 5's are in 15; in 25.

—  $20 \div 5 = \underline{\quad}$  asks, "*How many groups of 5 are in 20?*"

What question does each of the following examples ask?

4.  $15 \div 5 = \underline{\quad}$        $10 \div 5 = \underline{\quad}$        $25 \div 5 = \underline{\quad}$        $35 \div 5 = \underline{\quad}$

5.  $45 \div 5 = \underline{\quad}$        $20 \div 5 = \underline{\quad}$        $40 \div 5 = \underline{\quad}$        $30 \div 5 = \underline{\quad}$

6. Copy Exercises 4 and 5. Write the answers.

Think twice!

- $30 \div 5 = 6$  and  $40 \div 5 = 8$ , so  $70 \div 5 = \underline{\quad}$ .
- $20 \div 5 = 4$  and  $45 \div 5 = 9$ , so  $65 \div 5 = \underline{\quad}$ .
- $30 \div 5 = 6$  and  $25 \div 5 = 5$ , so  $55 \div 5 = \underline{\quad}$ .

# Pairs of division facts



1. How many gumdrops does Jimmy have in this box?

2. How many days will they last, if he eats 5 a day? if he eats 3 a day?



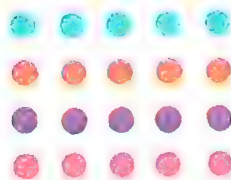
3. Here are   ?   dots.

In 10 there are   ?   5's.

$$10 \div 5 = \underline{\quad ? \quad}$$

In 10 there are   ?   2's.

$$10 \div 2 = \underline{\quad ? \quad}$$



4. Here are   ?   dots.

In 20 there are   ?   5's.

$$20 \div 5 = \underline{\quad ? \quad}$$

In 20 there are   ?   4's.

$$20 \div 4 = \underline{\quad ? \quad}$$



On squared paper, draw dot pictures to show these pairs of division facts.

$$30 \div 5 = 6$$

$$35 \div 5 = 7$$

$$40 \div 5 = 8$$

$$30 \div 6 = 5$$

$$35 \div 7 = 5$$

$$40 \div 8 = 5$$

Put your pictures in your Arithmetic Folder.

5. What division facts can you learn from these additions?

$$5 + 5 + 5 + 5 = \underline{\quad ? \quad} \quad 3 + 3 + 3 + 3 = \underline{\quad ? \quad} \quad 4 + 4 + 4 + 4 = \underline{\quad ? \quad}$$

— Tell the answers.

*a*

*b*

*c*

*d*

6.  $40 \div 5 = \underline{\quad ? \quad}$

$25 \div 5 = \underline{\quad ? \quad}$

$35 \div 5 = \underline{\quad ? \quad}$

$15 \div 5 = \underline{\quad ? \quad}$

7.  $30 \div 5 = \underline{\quad ? \quad}$

$45 \div 5 = \underline{\quad ? \quad}$

$40 \div 8 = \underline{\quad ? \quad}$

$20 \div 5 = \underline{\quad ? \quad}$

8.  $35 \div 7 = \underline{\quad ? \quad}$

$30 \div 6 = \underline{\quad ? \quad}$

$45 \div 9 = \underline{\quad ? \quad}$

$15 \div 3 = \underline{\quad ? \quad}$

9.  $10 \div 5 = \underline{\quad ? \quad}$

$5 \div 5 = \underline{\quad ? \quad}$

$10 \div 2 = \underline{\quad ? \quad}$

$20 \div 4 = \underline{\quad ? \quad}$

10. Copy Exercises 6 through 9. Write the answers.

# Division facts of five



Kathy is making paper flowers. How many 5-inch flower stems can she cut from a piece of wire 30 inches long?

We can write the question, "How many 5's are in 30?" in two ways:  $\longrightarrow$

$$30 \div 5 = \underline{\quad ? \quad}$$

$$\begin{array}{r} 5 \overline{)30} \end{array}$$

The answer is  $\underline{\quad ? \quad}$ .

1. Read the division facts of fives below like this:

"How many fives in five?" "One." "How many fives in ten?" "Two"; and so on.

## Division Facts of Fives

$$\begin{array}{cccccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 5 \overline{)5} & 5 \overline{)10} & 5 \overline{)15} & 5 \overline{)20} & 5 \overline{)25} & 5 \overline{)30} & 5 \overline{)35} & 5 \overline{)40} & 5 \overline{)45} \end{array}$$

$$\begin{array}{cccccccccc} 5 & 5 & 5 & 5 & 5 & 5 & 5 & 5 & 5 \\ 1 \overline{)5} & 2 \overline{)10} & 3 \overline{)15} & 4 \overline{)20} & 5 \overline{)25} & 6 \overline{)30} & 7 \overline{)35} & 8 \overline{)40} & 9 \overline{)45} \end{array}$$

2. Now read the division facts of fives this way: "5 divided by 5 is 1; 10 divided by 5 is 2"; and so on.

— Read each fact below in two ways. Tell the answers.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
3. $5 \overline{)40}$	$5 \overline{)5}$	$5 \overline{)35}$	$2 \overline{)10}$	$3 \overline{)15}$	$5 \overline{)25}$	$5 \overline{)20}$
4. $5 \overline{)25}$	$5 \overline{)45}$	$5 \overline{)10}$	$5 \overline{)40}$	$5 \overline{)20}$	$5 \overline{)15}$	$6 \overline{)30}$
5. $5 \overline{)30}$	$8 \overline{)40}$	$5 \overline{)45}$	$5 \overline{)15}$	$9 \overline{)45}$	$4 \overline{)20}$	$7 \overline{)35}$

6. Copy Exercises 3 through 5 and write the answers. Make and study Help-Yourself Cards for each fact you do not know. Then write the answers again.

$$\begin{array}{r} 5 \overline{)40} \end{array}$$



## Using division facts of fives

1. How many 5-cent candy bars can you buy for 35¢?

Think: How many groups of 5 cents each are there in 35 cents?  $35 \div 5 = \underline{\quad ? \quad}$

2. Molly can make a bracelet out of 5 paper clips. She has 40 paper clips. How many bracelets can she make?

Think: How many groups of 5 paper clips are there in 40 paper clips?  $40 \div 5 = \underline{\quad ? \quad}$

— Tell what you think to find each answer. Write each division fact you use. Draw dot pictures if you need to.

3. How many 5-cent toys can you buy for:

20¢?    30¢?    15¢?    45¢?    35¢?    40¢?

4. Allowing 5 spools to a doll, how many spool dolls can you make with 15 spools? 20? 10? 35? 40? 45?

5. John can make 1 paper airplane in 5 minutes. How many can he make in 10 minutes? 15 minutes? 35 minutes? Use a clock to prove your answers.

6. Alice made 25 lollipops. If she ties them in bunches of 5 to sell at the school fair, how many bunches will she have?

7. Tom needs 40 little bells for a clown costume. The bells come 5 to a card. How many cards should he buy?

8. Jane needs 15 hair curlers. The curlers come 5 on a card. How many cards should she buy?

9. How many pies, each cut into 6 equal pieces, would be needed to serve 30 people?

10. Bill needs 30 doughnuts for a party. They come 5 in a package. How many packages should he buy?

## Missing numbers in multiplication

Jane said, "I can *undo* any multiplication by a division. I'll show you what I mean."

$$\begin{array}{rcl} 5 \times 6 = 30 & 6 \overline{) 30} & \begin{array}{r} 5 \\ \hline \end{array} \\ 6 \times 5 = 30 & 5 \overline{) 30} & \begin{array}{r} 6 \\ \hline \end{array} \end{array}$$



1. Write this multiplication:  $8 \times 5 = 40$

- Divide the 40 by 8. You get ?.
- Divide the 40 by 5. You get ?.

2. Write this example:  $5 \times N = 35$

If you divide the 35 by the 5, can you find the number N stands for? What number is it?

— What number does N stand for in each example?

- | <i>a</i>             | <i>b</i>          | <i>c</i>          | <i>d</i>          |
|----------------------|-------------------|-------------------|-------------------|
| 3. $N \times 5 = 20$ | $5 \times N = 25$ | $N \times 5 = 45$ | $8 \times N = 40$ |
| 4. $5 \times N = 10$ | $N \times 5 = 35$ | $6 \times N = 30$ | $N \times 5 = 15$ |

5. Write the divisions you use to find what numbers N stands for in Exercises 3 and 4.

Think twice!

6.  $7 \times 16 = 112$ , so  $112 \div 7 = \underline{\quad ? \quad}$ , and  $112 \div 16 = \underline{\quad ? \quad}$ .  
7.  $24 \times 5 = 120$ , so  $120 \div 24 = \underline{\quad ? \quad}$ , and  $120 \div 5 = \underline{\quad ? \quad}$ .  
8.  $35 \times 12 = 420$ , so  $420 \div 35 = \underline{\quad ? \quad}$ , and  $420 \div 12 = \underline{\quad ? \quad}$ .  
9.  $25 \times 6 = 150$ , so  $150 \div 25 = \underline{\quad ? \quad}$ , and  $150 \div 6 = \underline{\quad ? \quad}$ .

# Multiplication – Division families

1. Dick said, "I just drew a picture of a family. It's the 3, 5, 15 family."

Look carefully at Dick's picture.  
Find these members of the family.



$$3 \times 5 = 15 \quad 5 \times 3 = 15 \quad 15 \div 5 = 3 \quad 15 \div 3 = 5$$

2. These 20 dots show that:



- 5 groups of 4 dots are   ?   dots.
- 4 groups of 5 dots are   ?   dots.
- In 20 dots there are   ?   groups of 4 dots.
- In 20 dots there are   ?   groups of 5 dots.

3. The dots in Exercise 2 will help you answer this question: How much will four 5-cent balls cost? Tell three other questions the dots could answer.

4.  $4 \times 5 = 20$ , so  $5 \times 4 = \underline{\quad ? \quad}$ ;  $20 \div 5 = \underline{\quad ? \quad}$ ; and  $20 \div 4 = \underline{\quad ? \quad}$ .

5.  $6 \times 5 = 30$ , so  $5 \times 6 = \underline{\quad ? \quad}$ ;  $30 \div 6 = \underline{\quad ? \quad}$ ; and  $30 \div 5 = \underline{\quad ? \quad}$ .

6.  $35 \div 5 = 7$ , so  $35 \div 7 = \underline{\quad ? \quad}$ ;  $5 \times 7 = \underline{\quad ? \quad}$ ; and  $7 \times 5 = \underline{\quad ? \quad}$ .

7. Seven girls in a music club pay 5¢ each a week in dues. They collect   ?  ¢ each week.

8. Five boys in the Campers Club pay 7¢ each a week in dues. They collect   ?  ¢ each week.

9. Read Exercises 7 and 8 again. Then answer these questions.

- Does each club have the same number of members?
  - Do the girls pay the same dues as the boys?
  - Do the clubs collect the same amount each week?
- Explain why.





# Practice with number families

1. On squared paper, draw a dot picture to show each of these families. Mark your pictures *a*, *b*, *c*, and *d*.

<i>a</i> $6 \times 5 = 30$ $5 \times 6 = 30$ $30 \div 5 = 6$ $30 \div 6 = 5$	<i>b</i> $7 \times 5 = 35$ $5 \times 7 = 35$ $35 \div 5 = 7$ $35 \div 7 = 5$	<i>c</i> $8 \times 5 = 40$ $5 \times 8 = 40$ $40 \div 5 = 8$ $40 \div 8 = 5$	<i>d</i> $9 \times 5 = 45$ $5 \times 9 = 45$ $45 \div 5 = 9$ $45 \div 9 = 5$
---	---	---	---

2. Which of your dot pictures show the answers?

- For 35¢ you can get   ?   7-cent pencils.
- One eraser costs 5¢. Nine erasers will cost   ?  ¢.
- Five 8-cent ice cream cones will cost   ?  ¢.
- To seat 30 boys, 6 boys to a row,   ?   rows of chairs are needed.

— Name three other facts in the family of each of the examples below.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
3. $4 \times 5 = \underline{\quad ? \quad}$	$35 \div 5 = \underline{\quad ? \quad}$	$10 \div 5 = \underline{\quad ? \quad}$	$9 \times 5 = \underline{\quad ? \quad}$
4. $5 \times 6 = \underline{\quad ? \quad}$	$15 \div 3 = \underline{\quad ? \quad}$	$40 \div 8 = \underline{\quad ? \quad}$	$5 \times 1 = \underline{\quad ? \quad}$

5. For 40¢ you can get:

  ?   10-cent toys        ?   5-cent toys        ?   8-cent toys

6. For 30¢ you can get:

  ?   10-cent balls        ?   5-cent balls        ?   6-cent balls

7. For 20¢ you can get:

  ?   10-cent pins        ?   4-cent pins        ?   5-cent pins

# Oral practice

— Watch the signs!

a	b	c	d	e
1. $1 \times 5$	$11 - 5$	$15 \div 5$	$3 \times 5$	$45 \div 5$
$20 \div 4$	$2 + 5$	$9 - 4$	$7 - 2$	$10 \div 2$
$5 \times 5$	$30 \div 6$	$5 \times 4$	$7 + 5$	$14 - 5$
2. $9 + 5$	$12 - 7$	$5 + 4$	$35 \div 5$	$7 \times 5$
$10 - 5$	$5 \times 2$	$25 \div 5$	$8 \times 5$	$5 + 8$
$3 + 5$	$40 \div 8$	$5 + 5$	$13 - 5$	$8 - 5$

3. Tell the two division facts each multiplication teaches.

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline 35 \end{array}$$



— Tell the fact you use to find each answer.

4. How many 5-cent balloons can Carl get for 35¢?

5. At 5¢ each, how much will 8 balloons cost?

6. How much will a 5-cent and an 8-cent balloon cost?

7. How many 4-cent packages of flower seed can Peter buy for 20¢?

8. How many cookies will you get in 5 packages, if there are 6 cookies in a package?

9. Tom had 14¢. He spent 5¢. How much has he left?

10. At 5¢ each, how much will 9 tickets cost?

11. How many yards are there in 3 feet? in 15 feet?

12. How many gallons are there in 4 quarts? in 20 quarts?

# One fifth

1. When five boys share a pie equally, the pie is cut into   ? equal pieces. Each boy gets *one fifth* of the pie.

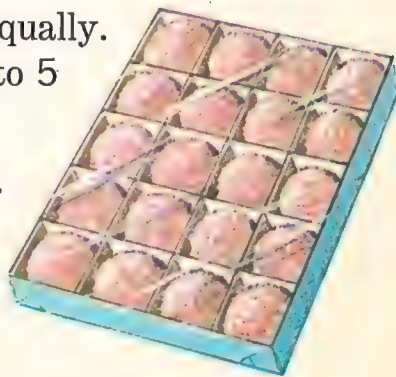
One *fifth* is written  $\frac{1}{5}$



$\frac{1}{5}$  means *1 of the* 5 equal parts of a whole

2. Five children want to share 20 cookies equally.

Tell how you would give out 20 cookies to 5 children. Each child gets   ? cookies.



- You divide 20 cookies into 5 equal parts.
- Each child gets 1 of the 5 equal parts.
- Each child gets  $\frac{1}{5}$  of the 20 cookies.
- Each child gets   ? cookies.
- Does  $\frac{1}{5}$  of 20 =  $20 \div 5$ ?

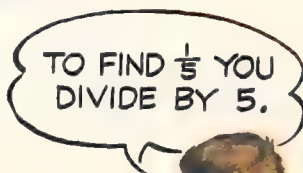
3. Divide 30 counters equally among 5 children.



- You divide 30 counters into 5 equal parts.
- Each child gets 1 of the five equal parts.
- Each child gets  $\frac{1}{5}$  of the counters.
- Each child gets   ? counters.

Does  $\frac{1}{5}$  of 30 =  $30 \div 5$ ?

■ To find  $\frac{1}{5}$  of a group or a number, divide it by 5.





## Finding one fifth of a number

1. Find  $\frac{1}{5}$  of each of these:

40   35   20   45   5   30   15   10   25   50

2. Five boys share 20¢ equally. Each boy gets  $\frac{1}{5}$  of 20¢.  
Each boy gets   ?  ¢.

3. Five girls share 35 apples equally. Each girl gets  $\frac{1}{5}$  of 35 apples. Each girl gets   ?   apples.

4. Five girls shared 30¢ equally. Each got   ?  ¢.

5. If you had to place 40 chairs in 5 equal rows, how would you go about doing it?

How many chairs would you put in each row?

6. Which of these could five children share equally?

16 pennies   27 balloons   40 crayons   23 marbles   30 jacks






Think twice!







7. In a card game called Fly to the Moon, there are 42 cards. If all of the cards were dealt out to five children:




- Would each child get 9 cards?
- Would each child get 8 cards?
- Would some children get 8 cards and some 9?

Explain each of your answers.

8. Which of these show  $\frac{1}{5}$  of a number? How do you know?

a               

b                  

c         

# Keeping up in arithmetic

## Oral

1. Find the sum of 6, 6, 5, and 8.
2. How many days are there in a week? Name them.
3. 1 qt. =    pt. 1 gal. =    qt. 1 yd. =    in. 1 ft. =    in.
4. What number does N stand for in  $N \times 7 = 35$ ?
5. Tell  $\frac{1}{5}$  of 45; 35; 20; 30; 15; 40; 25.

## Written

1. Write the number that is 3 hundreds 7 tens 4 ones.
2. Subtract 97 from 126. Add 247 and 563.
3. Using the digits 8, 2, and 7, write the largest number you can; the smallest.
4. Draw a square. Now draw 1 line to divide the square into triangles. What part of the square is each triangle?
5. Find the sum of sixty-five and seven. Check.
6. What number divided by 5 gives an answer of 9?
7. Carl wants to buy a saw that costs \$1.49. He has saved \$.56. How much more does he need? Check.
8. From quarter after two until three o'clock is    minutes.
9. A quart of ice cream fills 10 ice-cream cones. How many quarts are needed for 30 cones?
10. Dick has 40¢. With it he can buy    10-cent candy bars, or    5-cent candy bars.

# Remainders in division

Rusty has 12 pennies. He wonders how many nickels he can get for them. Can you tell?

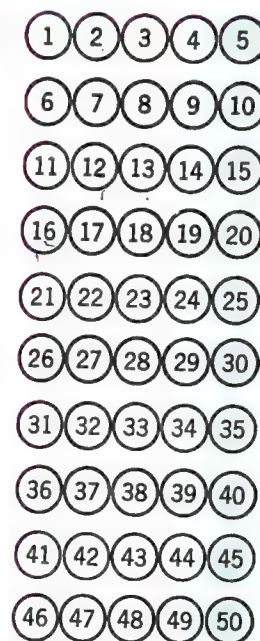


1. Above are the 12 pennies. Rusty can get 1 nickel for each five pennies. How many 5's are there? How many pennies will be left over?



- Use coins to show how many nickels you can get for 13 pennies; 14 pennies; 15; 16; 17; 18.
- Show how many pennies are left over each time.

2. How many circles are in each row?
3. Count the first 11 circles. In 11 circles there are 2 rows of 5 and    circle left over.
4. In 12 circles there are    rows of 5 and    circles over.
5. In 13 there are    5's and    over.
6. In 14 there are    5's and    over.
7. In 15 there are    5's and    over.
8. In 16 there are    5's and    over.
9. In 17 there are    5's and    over.  
Keep on going up to 50 circles.





## Finding remainders

When Ted found how many 5's there are in 21, he first thought, "How many 5's in 20?" Ted knew that there are 4 fives in 20. So he knew that in 21 there are 4 fives and 1 left over.

Ted wrote:  $\longrightarrow$

The "1 left over" is called the *remainder*.

He wrote "r1" in his answer to show a remainder of 1.

$$\begin{array}{r} 4 \text{ r}1 \\ 5 \overline{)21} \\ \underline{20} \\ 1 \end{array}$$

1. Read the divisions in the box below. Begin this way:  
"In 6 there is 1 five and 1 over; in 7 there is 1 five and 2 over."

Use the circles on page 206 to check your work.

$$\begin{array}{r} 1 \text{ r}1 \\ 5 \overline{)6} \end{array}$$

$$\begin{array}{r} 1 \text{ r}2 \\ 5 \overline{)7} \end{array}$$

$$\begin{array}{r} 1 \text{ r}3 \\ 5 \overline{)8} \end{array}$$

$$\begin{array}{r} 1 \text{ r}4 \\ 5 \overline{)9} \end{array}$$

$$\begin{array}{r} 2 \\ 5 \overline{)10} \end{array}$$

$$\begin{array}{r} 2 \text{ r}1 \\ 5 \overline{)11} \end{array}$$

$$\begin{array}{r} 2 \text{ r}2 \\ 5 \overline{)12} \end{array}$$

$$\begin{array}{r} 2 \text{ r}3 \\ 5 \overline{)13} \end{array}$$

$$\begin{array}{r} 2 \text{ r}4 \\ 5 \overline{)14} \end{array}$$

$$\begin{array}{r} 3 \\ 5 \overline{)15} \end{array}$$

$$\begin{array}{r} 3 \text{ r}1 \\ 5 \overline{)16} \end{array}$$

$$\begin{array}{r} 3 \text{ r}2 \\ 5 \overline{)17} \end{array}$$

2. When Ted is dividing by five, he calls these numbers his Dividing-by-Five Helping Numbers. Why?

5      10      15      20      25      30      35      40      45

3. To find how many fives are in 19, first count back until you come to a Helping Number: 19, 18, 17, 16, 15.

Think: 15 is my Helping Number.  $15 \div 5 = 3$

To find the remainder, subtract 15 from 19.  $19 - 15 = 4$

In 19 there are   3   fives and   4   left over.

4. What Helping Number would you use in finding how many fives there are in 14? 16? 17? 18?

## Using helping numbers

1. This is how to use a Helping Number to divide 23 by 5.

- ▶ Count back to a Helping Number: 23, 22, 21, 20.
- ▶ Think: My Helping Number is 20.  $20 \div 5 = 4$ .
- ▶ Think:  $23 - 20 = 3$ .
- ▶ To show your thinking you may write:  $\longrightarrow$   
In 23 there are   ?   5's and   ?   left over.

$$\begin{array}{r} 4 \text{ r}3 \\ 5 \overline{)23} \\ \underline{20} \\ 3 \end{array}$$

2. Divide 34 by 5 like this:

- ▶ Count back to a helping number: 34, 33, 32, 31, 30.
- ▶ Think: My Helping Number is 30.  $30 \div 5 = 6$
- ▶ Think:  $34 - 30 = 4$ .
- ▶ To show your thinking write:  $\longrightarrow$   
In 34 there are   ?   5's and   ?   left over.

$$\begin{array}{r} 6 \text{ r}4 \\ 5 \overline{)34} \\ \underline{30} \\ 4 \end{array}$$

3. Tell how you would find how many 5's there are in 42.

4. Billy and Jean want to find the number of 5's in 22.

- Billy counted back to 20. He thought "How many 5's in 20?" Did he use the right Helping Number?
- Jean counted back to 15. She thought "How many 5's in 15?" Jean used the wrong Helping Number. Why is 15 wrong?
- Can you tell how many 5's there are in 22?  
What is the remainder?

5. How many 5-cent apples can you buy for:

10¢    11¢    12¢    13¢    14¢    15¢    16¢    17¢

What is your remainder each time?

**Think twice!**

Use these numbers in a division example: 1, 5, 31, and 6.

# Division practice

22 ÷ 5 = ?  
WHAT IS MY  
HELPING  
NUMBER?



1. What Helping Number would you use to find how many 5's there are in 21? 22? 23? 24?

2. Tell the Helping Number you would use to find how many 5's there are in each of the numbers below.

28	12	38	31	15	24	35	37	41	10
23	20	21	14	11	16	33	36	27	47
39	29	13	22	32	34	17	26	19	48

3. Divide each of the numbers in Exercise 2 by 5. Write your work like this:  $\longrightarrow$

$$\begin{array}{r} 5 \text{ r} 3 \\ 5 \overline{) 28} \\ \underline{25} \\ 3 \end{array}$$

4. What is the largest remainder you can have when you are dividing by 5?

5. Any number that can be divided by 5 without a remainder has either a ? or a ? in ones place.

6. Jim makes jumping jacks. He uses 5 spools for each. To find out how many jumping jacks he can make with 23 spools, he did this division:  $\longrightarrow$

Does the remainder of 3 mean he will have 3 spools left over, or 3 jumping jacks left over?

$$\begin{array}{r} 4 \text{ r} 3 \\ 5 \overline{) 23} \\ \underline{20} \\ 3 \end{array}$$

7. How many 5-cent candy bars can Pete buy with 18¢? How many cents will he have left over?

8. How many bunches of 5 roses can you make from 32 roses? How many roses will be left over?

9. If you use 5 sheets of paper in one booklet, how many booklets can you make from 38 sheets?

How many sheets will be left over?

10. Tell the Helping Numbers you used to work Exercises 7, 8, and 9.





# Practice in multiplying and dividing

— Copy and work.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$
2. $\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$
3. $5 \overline{)42}$	$5 \overline{)5}$	$5 \overline{)22}$	$5 \overline{)23}$	$5 \overline{)30}$	$5 \overline{)32}$	$5 \overline{)11}$
4. $5 \overline{)38}$	$5 \overline{)27}$	$5 \overline{)10}$	$5 \overline{)37}$	$5 \overline{)9}$	$5 \overline{)25}$	$5 \overline{)45}$
5. $5 \overline{)15}$	$5 \overline{)12}$	$5 \overline{)28}$	$5 \overline{)24}$	$5 \overline{)17}$	$5 \overline{)29}$	$5 \overline{)13}$
6. $5 \overline{)40}$	$5 \overline{)20}$	$5 \overline{)8}$	$5 \overline{)14}$	$5 \overline{)49}$	$5 \overline{)18}$	$5 \overline{)48}$
7. $5 \overline{)33}$	$5 \overline{)7}$	$5 \overline{)35}$	$5 \overline{)44}$	$5 \overline{)19}$	$5 \overline{)47}$	$5 \overline{)43}$

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
8. $45 \div 5$	$35 \div 7$	$10 \div 5$	$30 \div 6$	$5 \div 5$
9. $15 \div 5$	$20 \div 5$	$40 \div 8$	$25 \div 5$	$30 \div 5$
10. $\frac{1}{5}$ of 35	$\frac{1}{5}$ of 25	$\frac{1}{5}$ of 10	$\frac{1}{5}$ of 45	$\frac{1}{5}$ of 5
11. $\frac{1}{5}$ of 40	$\frac{1}{5}$ of 20	$\frac{1}{5}$ of 15	$\frac{1}{5}$ of 35	$\frac{1}{5}$ of 30
12. $5 \times 8$	$6 \times 5$	$5 \times 4$	$9 \times 5$	$5 \times 3$
13. $2 \times 5$	$5 \times 5$	$1 \times 5$	$5 \times 7$	$10 \times 5$

14. Does  $5 + 5 + 5 + 5 = 4 \times 5$ ?

15. What number does N stand for in each of these?

$N \times 5 = 25$	$6 \times N = 30$	$N \times 3 = 15$	$7 \times N = 35$
$5 \times N = 40$	$N \times 5 = 20$	$5 \times N = 45$	$N \times 2 = 10$

# Addition and subtraction review

1. Take the addition test on page 134.
2. Take the subtraction test on page 135.
3. Tell what addition facts you should know to do these additions. Then add and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
32	24	55	86	34	57	93	64
<u>25</u>	<u>73</u>	<u>64</u>	<u>43</u>	<u>90</u>	<u>82</u>	<u>65</u>	<u>75</u>

4. Tell what subtraction facts you should know to do these subtractions. Then subtract and check.

86	98	156	165	129	148	137	139
<u>40</u>	<u>33</u>	<u>73</u>	<u>81</u>	<u>57</u>	<u>66</u>	<u>54</u>	<u>75</u>

5. Jane says she uses the fact  $9 + 8 = 17$  six times in doing these additions. Prove that she is right.

			29	24	42
39	394	189	30	63	36
<u>28</u>	<u>283</u>	<u>288</u>	<u>48</u>	<u>85</u>	<u>58</u>

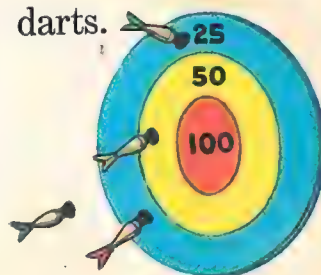
6. Peter says he uses the fact  $15 - 9 = 6$  four times in doing these subtractions. Prove that he is right.

156	45	160	87	163	136
<u>93</u>	<u>29</u>	<u>95</u>	<u>59</u>	<u>97</u>	<u>89</u>

7. Jack had a score of 425 points in a game of darts. Then he won 100 points more, so his score was ?.

8. The difference between 135 and 78 is ?.

9. How much change will Tim get from \$.50 when he spends \$.23?



# PROBLEM TEST 5



1. Mary paid 10¢ for a thimble, 19¢ for thread, 5¢ for needles, and 35¢ for a zipper. She spent   ?  ¢.
2. How much will 9 paper hats cost at 5¢ each?
3. Five girls shared 20¢ equally. Each got   ?  ¢.
4. How many bookmarks, 5 inches long, can be cut from a yard of ribbon? How much ribbon will be left?
5. Miss Smith had 90 flower bulbs. She planted 65 bulbs. She gave Billy the others for the school garden. How many bulbs did Billy get?
6. Tom and Bill picked these cherries. They have enough to fill   ?   quart boxes.
7. When December 18 comes on a Wednesday, the following Wednesday is December   ?  .
8. Fred has 45¢. How much more does he need to buy an 85-cent flashlight?
9. Tony can get a sailor cap at the Swap Shop for 29¢. He can get a new one at the Sport Center for 95¢. How much can he save if he buys at the Swap Shop?
10. Find the cost of a bathing suit at \$3.79, bathing slippers at \$1.49, and a bathing cap for \$.89.



Write your score on your Problem Test Record.

Think twice!

- If 6 boys share \$10, will each boy get as much as \$2?
- $5 \times 12 = 60$ . Does  $10 \times 12 = 120$ ?



# IT'S CHECK-UP TIME



1. Which one of these does not mean the same as the others?

$$5 + 5 + 5 + 5 + 5 + 5$$

6 fives

$$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$$

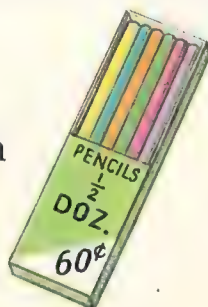
$$\begin{array}{r} 6 + 5 \\ 6 \times 5 \end{array}$$

2. Find the cost of three 5-cent balloons.

3. How many toy airplanes at 5¢ each can Dick buy for 39¢? How much money will he have left?

4. Jerry bought this box of pencils. —————>

Ann wants to buy one of the pencils from Jerry. How much should she pay?



5. Write the number family of  $9 \times 5 = 45$ .

6. Five girls shared 25¢ equally. Each got   ¢.

7. Which of these could 5 boys share equally?

27 cents    40 acorns    19 shells    33 stamps

8. Which of these pictures shows how many 6's there are in 30?

9. In a classroom there are 5 rows of desks, with 9 desks in a row. How many desks are there?

10.  $12 \times 5 = 60$ , so  $13 \times 5 = \underline{\quad}$ .

If you have time, try these —

11. Copy these numbers in order. Begin with the largest.

$$\frac{1}{4} \quad 0 \quad \frac{1}{2} \quad 1 \quad \frac{1}{5} \quad \frac{1}{3}$$

12. Find two pairs of numbers for this:

$$\triangle ? \times \square ? = 40$$





## Arithmetic in pictures

Bill said that the picture of the egg box above shows several number facts.

Make a list of the facts you think the egg box teaches. Here is Bill's list. Is it like yours?

1.  $6 + 6 = 12$ .
2. Two 6's are 12.
3.  $12 - 6 = 6$ .
4. Six 2's are 12.
5. One half of 12 is 6.
6. One half dozen is 6.
7. In 12 there are two 6's.
8. In 12 there are six 2's.
9.  $2 + 2 + 2 + 2 + 2 + 2 = 12$ .

Make a list of the arithmetic facts that each of the other pictures shows.

# Facts that additions teach you

1. Why are these addition facts called doubles?

1	2	3	4	5	6	7	8	9
$\frac{+1}{2}$	$\frac{+2}{4}$	$\frac{+3}{6}$	$\frac{+4}{8}$	$\frac{+5}{10}$	$\frac{+6}{12}$	$\frac{+7}{14}$	$\frac{+8}{16}$	$\frac{+9}{18}$

2. The additions above teach these multiplication facts:

Two 1's are 2.

Two 2's are 4.

Two 3's are 6.

What other facts do the additions teach?

3. How does Exercise 1 help you answer these questions?

• How many 6's in 12?

• How many 8's in 16?

• How many 7's in 14?

• How many 9's in 18?

— Find the missing numbers.

4.  $3 + 3 = \underline{\quad}$   $\longrightarrow$  2 threes are  $\underline{\quad}$   $\rightarrow$  There are  $\underline{\quad}$  3's in 6.

5.  $2 + 2 + 2 = \underline{\quad}$   $\longrightarrow$  3 twos are  $\underline{\quad}$   $\rightarrow$  There are  $\underline{\quad}$  2's in 6.

6.  $4 + 4 = \underline{\quad}$   $\longrightarrow$  2 fours are  $\underline{\quad}$   $\rightarrow$  There are  $\underline{\quad}$  4's in 8.

7.  $2 + 2 + 2 + 2 = \underline{\quad}$   $\rightarrow$  4 twos are  $\underline{\quad}$   $\rightarrow$  There are  $\underline{\quad}$  2's in 8.

— Which picture helps you find each missing number?

8. 6 and 6 are  $\underline{\quad}$ .

A



9. Two 7's are  $\underline{\quad}$ .

B



10. There are  $\underline{\quad}$  2's in 12.

C



11. There are  $\underline{\quad}$  7's in 14.

D



12. Seven 2's are  $\underline{\quad}$ .

13. There are  $\underline{\quad}$  6's in 12.





## Using twos in multiplication

1. Timmy made the animals shown in the picture. How many are there?
2. How many clothespins did he need for one animal? for all the animals?
3. Count the clothespins by 2's. How many are 3 twos? 4 twos? 5 twos? 6 twos? 7 twos? 8 twos? 9 twos?
4. Say: "1 two is 2; 2 twos are 4; 3 twos are 6"; and so on up to "9 twos are 18."
5. Read these examples and tell the missing numbers. Say: "2 times 2 is 4"; and so on. Add or use counters to prove each answer.

$$2 \times 2 = \underline{\quad ? \quad}$$

$$4 \times 2 = \underline{\quad ? \quad}$$

$$6 \times 2 = \underline{\quad ? \quad}$$

$$8 \times 2 = \underline{\quad ? \quad}$$

$$3 \times 2 = \underline{\quad ? \quad}$$

$$5 \times 2 = \underline{\quad ? \quad}$$

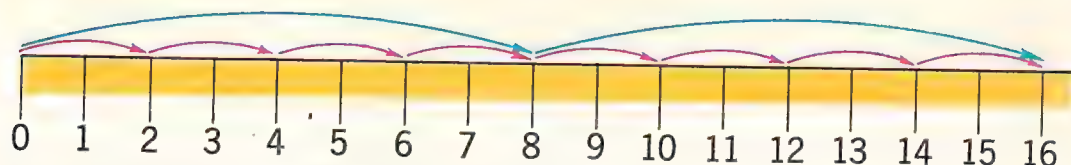
$$7 \times 2 = \underline{\quad ? \quad}$$

$$9 \times 2 = \underline{\quad ? \quad}$$

6. Timmy went to the store. He bought 2 sheets of blue paper, 2 sheets of red paper, 2 of orange, and 2 of green. In all, Timmy bought   ?   sheets of paper.

Write the multiplication fact you used to find the answer.

# Pairs of multiplication facts



1. On the number line the red lines show  $8 \times 2 = ?$ .

The blue lines show  $2 \times 8 = ?$ .

2. Find  $6 \times 2$  on the number line. Find  $7 \times 2$ .

$6 \times 2 = 12$ , so  $2 \times 6 = ?$ .  $7 \times 2 = 14$ , so  $2 \times 7 = ?$ .

3. Picture A below shows that  $5 \times 2 = ?$  and  $2 \times 5 = ?$ .

4. Which picture shows each of these pairs?

$$\begin{cases} 4 \times 2 \\ 2 \times 4 \end{cases}$$

$$\begin{cases} 6 \times 2 \\ 2 \times 6 \end{cases}$$

$$\begin{cases} 7 \times 2 \\ 2 \times 7 \end{cases}$$

$$\begin{cases} 8 \times 2 \\ 2 \times 8 \end{cases}$$

$$\begin{cases} 9 \times 2 \\ 2 \times 9 \end{cases}$$



— Tell the answers. Then write them.

a	b	c	d	e
5. $4 \times 2$	$6 \times 5$	$2 \times 5$	$2 \times 4$	$7 \times 5$
6. $2 \times 6$	$9 \times 5$	$8 \times 2$	$7 \times 2$	$2 \times 8$
7. $9 \times 2$	$2 \times 7$	$8 \times 5$	$5 \times 2$	$6 \times 2$

8. Jerry bought 2 boxes of cookies. There were 8 cookies in each box. In all, he bought 2 times 8 cookies, or ? cookies.



# Multiplication facts of twos

1. Read the table below.

Say: "1 times 2 is 2; 2 times 2 is 4"; and so on.

Multiplication Facts of Twos								
$\begin{array}{r} 2 \\ \times 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ \times 6 \\ \hline 12 \end{array}$	$\begin{array}{r} 2 \\ \times 7 \\ \hline 14 \end{array}$	$\begin{array}{r} 2 \\ \times 8 \\ \hline 16 \end{array}$	$\begin{array}{r} 2 \\ \times 9 \\ \hline 18 \end{array}$
$\begin{array}{r} 1 \\ \times 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$	$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$	$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$	$\begin{array}{r} 9 \\ \times 2 \\ \hline 18 \end{array}$

2. Practice until you can tell every answer below.

$\begin{array}{r} 2 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$
$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 9 \\ \hline \end{array}$

3. Copy Exercise 2 and write the answers. Make and study a Help-Yourself Card for each fact that you do not know. Then write the answers again.

4. Polly went to visit her aunt in the city for 2 weeks. 2 weeks =   ?   days.

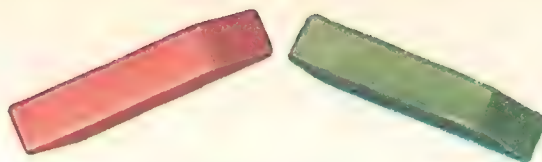
5. Polly's aunt bought this ice cream for a party. She bought   ?   quarts in all. →

6. Polly and her cousin made some party hats. They each made 8 party hats. In all, they made   ?   hats.





# Everyday problems



— Tell what you think as you solve each problem.

1. Find the cost of five 2-cent erasers.

Think: If one eraser costs 2¢, five erasers will cost 5 times 2 cents, or ? cents.  $5 \times 2 = \underline{\quad}$

Problem  
solving  
help

2. Find the cost of two 4-cent stamps.

3. A peanut usually contains two nuts. How many nuts will you have if you break open five peanuts?

4. Eight quarts of milk equal ? pints of milk.

5. Drinking straws often come in packages of 2. How many straws are there in 7 packages? 8? 9?

6. Find the cost of two of these pencils.

7. Peter has 3 pairs of yellow ducks. How many ducks is that?

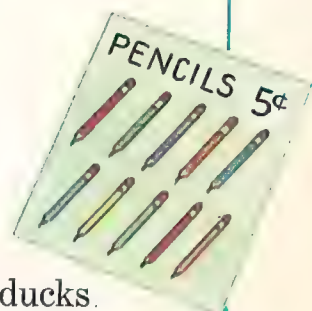
8. If two children play on one seesaw, how many children can play on four seesaws?

9. Bobby bought these two bags of cookies. How many cookies did he get in all?

10. It takes 8 pairs of children to do the Leapfrog Dance. How many children are needed for the dance?

11. Write each fact you use for Exercises 1 through 10.

12. Mary and Jack each found the cost of six 2-cent whistles.



MARY'S WAY

$$2¢ + 2¢ + 2¢ + 2¢ + 2¢ + 2¢ = 12¢$$

JACK'S WAY

$$6 \times 2¢ = 12¢$$

Whose way do you like better? Whose way is shorter?

## Using twos in cooking



The 18 girls of Mrs. Bell's Brownie Troop are going to cook their lunch next Saturday. Each girl will have a bowl of soup, a sandwich, a glass of milk, and half a grapefruit.

1. One can of soup will make 2 bowls of soup. Can you tell, without help, how many cans of soup are needed to serve 18 girls?

2. Nan made a drawing. First she drew 18 bowls. Then she drew a soup can over each group of 2 bowls. Why did she do that?



3. Nan's drawing shows there are   ?   2's in 18.

For 18 bowls of soup   ?   cans are needed.

4. Read the chart below and tell the missing numbers. Begin this way: "1 can of soup fills 2 bowls."

"2 cans of soup fill 4 bowls." and so on.

CANS OF SOUP	1	2	3	4	5	6	7	8	9
BOWLS OF SOUP	2	4	6	?	?	?	?	?	?

5. Each girl gets one half of a grapefruit. How many children will one grapefruit serve? Draw a picture to show how many grapefruit will be needed for 18 girls.

6. Doris made this drawing and found that   ?   grapefruit will be needed. Explain the drawing.



7. Tell what this chart means. Tell the missing numbers.

NO. OF SERVINGS	2	4	6	8	10	12	14	16	18
NO. OF GRAPEFRUIT	1	2	?	?	?	?	?	?	?

Think twice!

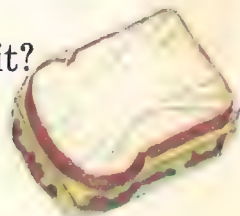
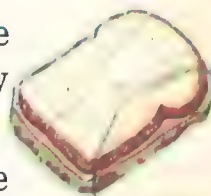
8. Each girl gets a sandwich. Two slices of bread are needed for each sandwich. Can you tell a way to find how many slices of bread are needed for 18 sandwiches?

Some of the girls in Mrs. Bell's troop figured out the cost of the lunch. You can do it if you are a good thinker. This is a fine chance to teach yourself new arithmetic.

- They bought 9 cans of soup at 10¢ a can.
- They bought 9 grapefruit at 5¢ each.
- They bought 18 half-pints of milk at 5¢ each.
- The 18 sandwiches cost 20¢ each, or \$3.60 in all.

9. How much did they spend for the soup? the grapefruit? the milk?

10. How much did they spend all together?



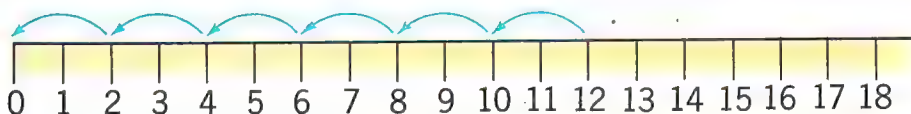




## How many twos?

The twelve girls of the Sing Song Club were going to buy new songbooks. They decided to buy one book for each group of two girls.

1. Sue said, "To find how many books to buy, we need to know how many 2's are in 12." Is she right? Explain.
2. Look at the picture. How many girls do you see? How many groups of 2 girls do you see? How many 2's are in 12? The club needs   ?   books.
3. Sue used this number line to find how many 2's are in 12.



She put her pencil on the 12 of her number line. She counted 2 spaces to the left and drew a line to 10. What did she do then? Sue found there are   ?   twos in 12.

4. Use Sue's number line to find how many 2's there are in:  
           4           10           6           14           18           8           16

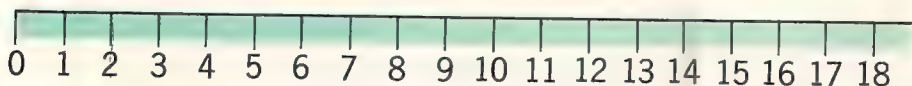
Think twice!

How many songbooks will your class need if one book is used for every two children?

# Dividing by two



You may use this number line to check your answers to Exercises 1 through 5.



1. How many 2-cent candies can you get for 10¢?
2. Jane has 14¢. How many 2-cent candies can she buy?
3. Bill saw 16 socks hanging on a line. How many pairs of socks is this?
4. Sue uses 2 slices of bread for one sandwich. How many sandwiches can she make from 8 slices?
5. How many 2-cent cookies can you get for 18¢?
6. Tell the division facts you use in Exercises 1 through 5.
7. Read the table below.

In 2 there is 1 two.

In 4 there are 2 twos.

In 6 there are 3 twos.

In 8 there are 4 twos.

In 10 there are 5 twos.

In 12 there are 6 twos.

In 14 there are 7 twos.

In 16 there are 8 twos.

In 18 there are 9 twos.

In 20 there are 10 twos.

— The example,  $12 \div 2 = \underline{\quad ? \quad}$ , asks how many groups of 2 there are in 12. What does each of these examples ask?

*a*

8.  $6 \div 2 = \underline{\quad ? \quad}$

*b*

$18 \div 2 = \underline{\quad ? \quad}$

*c*

$10 \div 2 = \underline{\quad ? \quad}$

*d*

$4 \div 2 = \underline{\quad ? \quad}$

9.  $14 \div 2 = \underline{\quad ? \quad}$

$8 \div 2 = \underline{\quad ? \quad}$

$20 \div 2 = \underline{\quad ? \quad}$

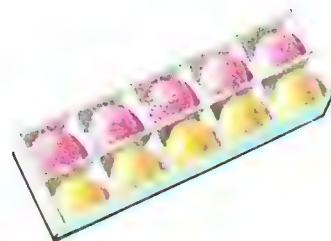
$16 \div 2 = \underline{\quad ? \quad}$

10. Read Exercises 8 and 9. Say: "6 divided by 2 is 3"; and so on. Then copy the exercises and write the answers.



# Pairs of division facts

1. How many gumdrops are in the box?



2. How many gumdrops does Sandra need to make a bird? a cat?

3. With 10 gumdrops Sandra can make   ?   birds, or   ?   cats.

4. The dot pictures will help you tell the missing numbers.



In 12 there are   ?   2's.  $12 \div 2 = \underline{\quad}$

In 12 there are   ?   6's.  $12 \div 6 = \underline{\quad}$



In 14 there are   ?   2's.  $14 \div 2 = \underline{\quad}$

In 14 there are   ?   7's.  $14 \div 7 = \underline{\quad}$



In 16 there are   ?   2's.  $16 \div 2 = \underline{\quad}$

In 16 there are   ?   8's.  $16 \div 8 = \underline{\quad}$



In 18 there are   ?   2's.  $18 \div 2 = \underline{\quad}$

In 18 there are   ?   9's.  $18 \div 9 = \underline{\quad}$

5.  $\begin{cases} 3 + 3 = 6 \text{ shows there are } \underline{\quad} \text{ 3's in 6.} & 6 \div 3 = \underline{\quad} \\ 2 + 2 + 2 = 6 \text{ shows there are } \underline{\quad} \text{ 2's in 6.} & 6 \div 2 = \underline{\quad} \end{cases}$

6.  $6 + 6 = 12$  shows there are   ?   6's in 12.  $12 \div 6 = \underline{\quad}$

7. What division fact does  $2 + 2 + 2 + 2 + 2 + 2 = 12$  show?

— Copy and write the answers.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
8. $10 \div 2$	$12 \div 6$	$6 \div 2$	$8 \div 4$	$18 \div 2$
9. $14 \div 7$	$8 \div 2$	$18 \div 9$	$16 \div 8$	$14 \div 2$
10. $16 \div 2$	$12 \div 2$	$10 \div 5$	$4 \div 2$	$6 \div 3$



# Division facts of twos



1. Read the division facts of twos like this:

"How many twos are there in two? One."

"How many twos are there in four? Two"; and so on.

## Division Facts of Twos

$\begin{array}{r} 1 \\ 2 \overline{)2} \end{array}$	$\begin{array}{r} 2 \\ 2 \overline{)4} \end{array}$	$\begin{array}{r} 3 \\ 2 \overline{)6} \end{array}$	$\begin{array}{r} 4 \\ 2 \overline{)8} \end{array}$	$\begin{array}{r} 5 \\ 2 \overline{)10} \end{array}$	$\begin{array}{r} 6 \\ 2 \overline{)12} \end{array}$	$\begin{array}{r} 7 \\ 2 \overline{)14} \end{array}$	$\begin{array}{r} 8 \\ 2 \overline{)16} \end{array}$	$\begin{array}{r} 9 \\ 2 \overline{)18} \end{array}$
$\begin{array}{r} 2 \\ 1 \overline{)2} \end{array}$	$\begin{array}{r} 2 \\ 2 \overline{)4} \end{array}$	$\begin{array}{r} 2 \\ 3 \overline{)6} \end{array}$	$\begin{array}{r} 2 \\ 4 \overline{)8} \end{array}$	$\begin{array}{r} 2 \\ 5 \overline{)10} \end{array}$	$\begin{array}{r} 2 \\ 6 \overline{)12} \end{array}$	$\begin{array}{r} 2 \\ 7 \overline{)14} \end{array}$	$\begin{array}{r} 2 \\ 8 \overline{)16} \end{array}$	$\begin{array}{r} 2 \\ 9 \overline{)18} \end{array}$

2. Practice these until you can say every answer.

$2 \overline{)16}$	$3 \overline{)6}$	$2 \overline{)14}$	$5 \overline{)10}$	$4 \overline{)8}$	$2 \overline{)2}$	$7 \overline{)14}$	$2 \overline{)10}$
$8 \overline{)16}$	$2 \overline{)8}$	$9 \overline{)18}$	$1 \overline{)2}$	$2 \overline{)12}$	$2 \overline{)18}$	$2 \overline{)4}$	$6 \overline{)12}$

3. Copy the division in Exercise 2 and write the answers.

Make Help-Yourself Cards for each division fact that you do not know. Practice until you know every answer.

$$\boxed{2 \overline{)14}}$$

4.  $8 \times 2 = 16$ , so  $16 \div 2 = ?$ .

$7 \times 2 = 14$ , so  $14 \div 2 = ?$ .

5.  $6 \times 2 = 12$ , so  $12 \div 2 = ?$ .

$9 \times 2 = 18$ , so  $18 \div 2 = ?$ .

6. What number does N stand for?

$2 \times N = 18$

$N \times 2 = 16$

$7 \times N = 14$

$N \times 2 = 8$

$N \times 2 = 14$

$4 \times N = 8$

$N \times 9 = 18$

$N \times 8 = 16$

— Tell the other facts in the family of each of these:

7.  $4 \times 2 = 8$

$6 \div 3 = 2$

$2 \times 5 = 10$

$16 \div 8 = 2$

8.  $2 \times 7 = 14$

$12 \div 2 = 6$

$18 \div 2 = 9$

$2 \times 2 = 4$

# Addition and subtraction practice

Do not use a



<sup>a</sup>  
1.  $47 + 10$

<sup>b</sup>  
 $47 + 20$

<sup>c</sup>  
 $47 + 21$

<sup>d</sup>  
 $47 + 32$

2.  $47 - 10$

$47 - 20$

$47 - 21$

$47 - 32$

3.  $85 + 10$

$85 + 20$

$85 + 31$

$85 + 42$

4.  $85 - 10$

$85 - 20$

$85 - 31$

$85 - 42$

5. Does  $496 + 302 =$  about 700 or about 800? Why?

6. Does  $501 + 410 =$  about 900 or about 1000? Why?

7. Does  $\$6.98 + \$2.00 =$  about \$8.00 or \$9.00? Why?

8. Does  $\$9.03 - \$2.95 =$  about \$7.00 or \$6.00? Why?

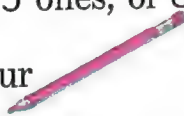
9.  $9 + 8 = \underline{\quad}$      $19 + 8 = \underline{\quad}$      $29 + 8 = \underline{\quad}$      $39 + 8 = \underline{\quad}$

10.  $6 + 9 = \underline{\quad}$      $16 + 9 = \underline{\quad}$      $26 + 9 = \underline{\quad}$      $36 + 9 = \underline{\quad}$

11.  $\$5.00 =$  4 dollars  $\underline{\quad}$  dimes.

12.  $95 =$  9 tens 5 ones, or 8 tens  $\underline{\quad}$  ones.

You may use your



13. Can you subtract and check these in three minutes?

$\begin{array}{r} 87 \\ 38 \end{array}$	$\begin{array}{r} 99 \\ 28 \end{array}$	$\begin{array}{r} 76 \\ 47 \end{array}$	$\begin{array}{r} 66 \\ 52 \end{array}$	$\begin{array}{r} 55 \\ 41 \end{array}$	$\begin{array}{r} 92 \\ 25 \end{array}$	$\begin{array}{r} 83 \\ 38 \end{array}$	$\begin{array}{r} 79 \\ 34 \end{array}$
---	---	---	---	---	---	---	---

14. Add and check. Use folded paper.

$\begin{array}{r} 174 \\ 32 \end{array}$	$\begin{array}{r} 70 \\ 109 \end{array}$	$\begin{array}{r} 34 \\ 126 \end{array}$	$\begin{array}{r} 37 \\ 78 \end{array}$	$\begin{array}{r} 204 \\ 508 \end{array}$	$\begin{array}{r} 43 \\ 304 \end{array}$	$\begin{array}{r} 102 \\ 208 \end{array}$	$\begin{array}{r} 205 \\ 308 \end{array}$
$\begin{array}{r} 107 \\ 206 \end{array}$	$\begin{array}{r} 37 \\ 775 \end{array}$	$\begin{array}{r} 78 \\ 189 \end{array}$	$\begin{array}{r} 63 \\ 159 \end{array}$	$\begin{array}{r} 38 \\ 119 \end{array}$	$\begin{array}{r} 206 \\ 107 \end{array}$	$\begin{array}{r} 409 \\ 103 \end{array}$	$\begin{array}{r} 204 \\ 106 \end{array}$

*Practice for excellence.* Do Practice Set 21, page 319.



## How many left over?

1. Steve is making paper-bag masks. He uses balloons for ears. He needs   ?   balloons for each mask.
2. Look at the picture. Steve has   ?   balloons. Has he enough balloons for 2 more masks? 3? 4?
3. Steve has enough balloons for 3 more masks. There will be   ?   balloon left over.  $7 \div 2 = 3$  and 1 left over.
4. The balloons cost 2¢ each. Steve has 11¢. He can buy   ?   more balloons. He will have   ?  ¢ over.  
 $11 \div 2 = 5$  and 1 left over.

5. These balloons show that:



In 3 there is 1 two and 1 over.

In 4 there are 2 twos.

In 5 there are 2 twos and 1 over.

In 6 there are 3 twos.

In 7 there are 3 twos and 1 over.



# Helping numbers and remainders

1. Tell how many twos there are in each number from 8 through 20. Begin this way: "In 8 there are 4 twos; in 9 there are 4 twos and 1 left over"; and so on.

2. When Linda is dividing by 2, she calls these numbers her Dividing-by-Two Helping Numbers. Why?

2    4    6    8    10    12    14    16    18    20

3. To divide 11 by 2, Linda thinks, "How many 2's in 10?" 10 is her Helping Number. 10 can be divided by 2 without a remainder. To find how much is left over, Linda thinks,  $11 - 10 = 1$ .

$$\begin{array}{r} 5 \text{ r}1 \\ 2 \overline{)11} \\ \underline{10} \\ 1 \end{array}$$

In 11, there are   5   2's and   1   left over.

4. Read the divisions in the box below.

Begin this way: "In 3 there is 1 two and 1 left over; in 5 there are 2 twos and 1 over"; and so on.

$$\begin{array}{r} 1 \text{ r}1 \\ 2 \overline{)3} \end{array}$$

$$\begin{array}{r} 2 \text{ r}1 \\ 2 \overline{)5} \end{array}$$

$$\begin{array}{r} 3 \text{ r}1 \\ 2 \overline{)7} \end{array}$$

$$\begin{array}{r} 4 \text{ r}1 \\ 2 \overline{)9} \end{array}$$

$$\begin{array}{r} 5 \text{ r}1 \\ 2 \overline{)11} \end{array}$$

$$\begin{array}{r} 6 \text{ r}1 \\ 2 \overline{)13} \end{array}$$

$$\begin{array}{r} 7 \text{ r}1 \\ 2 \overline{)15} \end{array}$$

$$\begin{array}{r} 8 \text{ r}1 \\ 2 \overline{)17} \end{array}$$

$$\begin{array}{r} 9 \text{ r}1 \\ 2 \overline{)19} \end{array}$$

5. The red numbers below are *even numbers*. The black numbers are *odd numbers*.

1    2    3    4    5    6    7    8    9    10    11    12

Say the even numbers to 20. Say the odd numbers to 21.

6. Is there a remainder of 1 when you find the number of twos in any even number? in any odd number?

7. What Helping Number would you use in finding how many 2's there are in each of these numbers?

9    13    17    5    11    19    3    15    7

8. Divide the numbers in Exercise 7 by two. Tell what subtractions you do to find the remainders.

9. Dick has a nickel. How many 2-cent pencils can he buy? How many cents will he have left over?

10. 11 mittens are 5 pairs and 1 extra mitten.

11. Jane has 15 jacks. When she plays, she can pick up 2 jacks 7 times, and then 1 jack.

12. If you lay out 17 pennies in piles of 2, you will have 8 piles of 2 pennies, and 1 extra penny.

13. Ted has 15¢. He can buy 7 of these cards and will have 1¢ left.

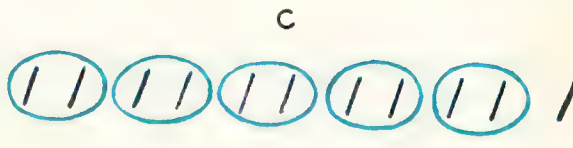
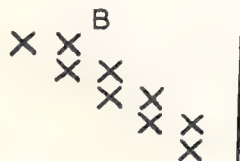


14. Find a drawing below to match each of these divisions:

$$11 \div 2 = 5r1$$

$$7 \div 2 = 3r1$$

$$9 \div 2 = 4r1$$



— Practice these divisions until you can say every answer.

15.  $2 \overline{)7}$      $2 \overline{)9}$      $2 \overline{)11}$      $2 \overline{)13}$      $2 \overline{)15}$      $2 \overline{)17}$      $2 \overline{)19}$

16.  $13 \div 2$      $9 \div 5$      $19 \div 2$      $11 \div 5$      $13 \div 5$

17.  $17 \div 2$      $19 \div 5$      $7 \div 2$      $9 \div 2$      $17 \div 5$

18. Copy Exercises 15, 16, and 17. Write the answers.

Think twice! When dividing a whole number by 2, can you ever have a remainder greater than 1? Explain.

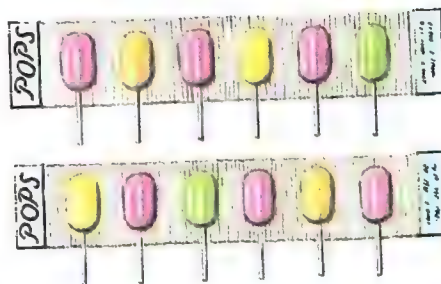
# Finding one half of a number

1. Put your hand over half of these 12 lollipops.

Now you see ? lollipops.

You covered ? lollipops.

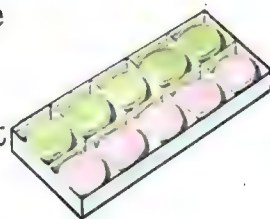
$$\frac{1}{2} \text{ of } 12 = \underline{\quad? \quad}.$$



2. Bob said, "If I look at these 10 mints one way, I see that  $\frac{1}{2}$  of 10 = 5."

"If I look at them another way, I see that the number of 2's in 10 is also 5."

Tell how Bob looks at the mints to see that  $\frac{1}{2}$  of 10 = 5; to see 5 twos in 10.



3.  $\frac{1}{2}$  of 10 = ?; the number of 2's in 10 also = ?.

You divide 10 by 2:

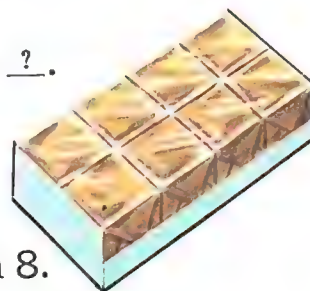
- to find  $\frac{1}{2}$  of 10.
- to find how many 2's there are in 10.

4. How do you look at these caramels to see that  $\frac{1}{2}$  of 8 = 4?  
to see 4 twos in 8?

5.  $\frac{1}{2}$  of 8 = ?; the number of 2's in 8 also = ?.

You divide 8 by 2:

- to find  $\frac{1}{2}$  of 8.
- to find how many 2's there are in 8.



 To find  $\frac{1}{2}$  of a number, divide the number by 2.



## Two uses of division

You divide any number by 2:

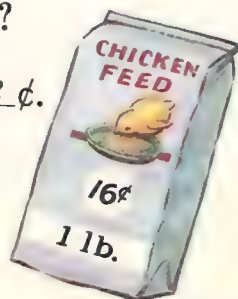
- to find  $\frac{1}{2}$  of it.
- to find how many 2's there are in it.

Problem  
solving  
help

1. What is half of each of these numbers?

12   6   18   4   10   16   2   8   14   20

2. How many 2's are there in each number in Exercise 1?
3. One half of Tom's 6 ducks are yellow. One half are black. So Tom has   ?   yellow and   ?   black ducks.
4. Jack wants to share 18 stamps equally with Tom. How many should he give Tom? How many should he keep?
5. From a foot of ribbon you can cut   ?   2-inch pieces.
6. If 14 boys divide into 2 equal teams, how many boys will there be on each team?
7. Bill went to a "Half-Price Sale." A 10-cent ball sold for  $\frac{1}{2}$  of 10¢, or   ?  ¢.
8. A dozen =   ?   things; a half dozen =   ?   things.
9. A gallon =   ?   quarts; a half gallon =   ?   quarts.
10. How many 2-cent candies can you get for 16¢?
11. Tom and Sue shared 16¢ equally. Each got   ?  ¢.
12. Carl wants  $\frac{1}{2}$  pound of feed for his chicks.  
How much will it cost?





LOLLIPOPS  
1¢ each



## Multiplication and division with one

1. Tell the cost of 1 lollipop; of 2; 3; 5; 7; 8; 9.

2. How much is  $4 \times 1$ ?  $6 \times 1$ ?  $7 \times 1$ ?  $9 \times 1$ ?

3.  $\begin{cases} 5 \times 1 = ? \\ 1 \times 5 = ? \end{cases}$   $\begin{cases} 6 \times 1 = ? \\ 1 \times 6 = ? \end{cases}$   $\begin{cases} 8 \times 1 = ? \\ 1 \times 8 = ? \end{cases}$   $\begin{cases} 9 \times 1 = ? \\ 1 \times 9 = ? \end{cases}$

4. How many 1-cent lollipops can you get for 2¢? 4¢?  
5¢? 8¢? 9¢?

5.  $6 \div 1 = ?$  asks, "How many 1's are there in 6?" What question does each of these ask? Tell the missing numbers.

$4 \div 1 = ?$        $5 \div 1 = ?$        $7 \div 1 = ?$        $9 \div 1 = ?$

6. How many 5-cent lollipops can you get for 5¢?  
How many 6-cent lollipops can you get for 6¢?  
How many 9-cent lollipops can you get for 9¢?



Make up a rule for finding the answer to:

- Any number times 1; 1 times any number.
- A number divided by 1; a number divided by itself.

— Copy and write the answers.

7.  $\begin{array}{r} 1 \\ \times 2 \\ \hline \end{array}$      $\begin{array}{r} 1 \\ \times 6 \\ \hline \end{array}$      $\begin{array}{r} 9 \\ \times 1 \\ \hline \end{array}$      $\begin{array}{r} 1 \\ \times 8 \\ \hline \end{array}$      $\begin{array}{r} 3 \\ \times 1 \\ \hline \end{array}$      $\begin{array}{r} 7 \\ \times 1 \\ \hline \end{array}$      $\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$      $\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$

8.  $7 \overline{)7}$      $1 \overline{)2}$      $3 \overline{)3}$      $6 \overline{)6}$      $1 \overline{)5}$      $1 \overline{)8}$      $4 \overline{)4}$      $1 \overline{)9}$



## Oral problems

1. Jim was standing in line for a drink at the fountain. There were 4 children in front of him and 3 behind him.

There were ? children in line, counting Jim.

Miss Smith said, "Half of you children go to the other fountain." The three children behind Jim went. Should Jim have gone too?

2. Joe saw 3 groups of airplanes. There were 5 planes in each group. How many planes did he see all together?

3. Sam wondered how many 2-cent cookies he could get for a dime. He thought, "How many 2's are there in 10?"

How many cookies should he get?

4. How many 2-cent cookies could you buy for:

6¢    10¢    14¢    8¢    12¢    18¢    16¢    20¢

5. On the train Bob pays only half fare. When his father's ticket costs 20¢, Bob's ticket costs ?.

What is the cost of a half fare when the full fare is:

28¢    14¢    18¢    12¢    16¢    10¢

6. Name all the numbers from 1 to 20 which have no remainder when divided by 2.

7. How many pairs of numbers can you find for each exercise below?

$$\triangle^a - \textcircled{?} = 20$$

$$\square^b \div \triangle^b = 2$$

$$\textcircled{?} + \square^c = 18$$





- |                          |                                 |   |
|--------------------------|---------------------------------|---|
| 1. $53 + 75$ [87]        | 4. $9 + 5 + 5 + 7$ [123-126]    | 7. $347$<br>65<br>289<br><u>174</u> [226] |
| 2. $49¢ + 36¢$ [104]     | 5. $\$3.84 + \$6.75$ [160]      |   |
| 3. $\$.38 + \$.47$ [106] | 6. $\$9 + \$.36 + \$4.86$ [166] |   |

Subtract and check:

- |  |   |  |  |
|--|---|--|--|
| 8. $98¢$<br><u><math>75¢</math></u> [68] | 9. $179$<br><u><math>93</math></u> [88] | 10. $96$<br><u><math>37</math></u> [111-112] | 11. $\$.75$<br><u><math>.48</math></u> [113] |
|--|---|--|--|



- Sue can buy gumdrops by the package. There are 5 gumdrops in 1 package. She wants 20 gumdrops. How many packages should she buy? [198]
- Write the sum of  $400 + 20 + 7$ . [83-84]
- Does  $9 + 9 = 18$  prove that  $2 \times 9 = 18$ ? [215]
- Carl says that  $2 + 2 + 2 + 2 + 2 + 2 = 12$  shows that there are 2 sixes in 12. Is he right? [215]
- How many 2-cent balloons can you get for 15¢? How much will you have left over? [228-229]
- Draw 2 chocolate bars the same size. Show that  $\frac{1}{2}$  of a bar is more than  $\frac{1}{3}$  of a bar. [55]
- How many 5-cent whistles can you buy for 49¢? How much will you have left over? [207-209]
- Jean practices her music 45 minutes each day. She has practiced 15 minutes today. How much longer must she practice? [69]



1. Write the other fact of this number family:

$$9 \times 2 = 18$$

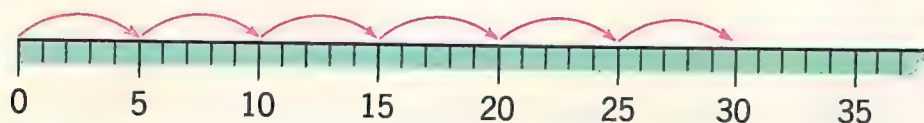
$$2 \times 9 = 18$$

$$18 \div 2 = 9$$

2. Which of these pictures (a, b, or c) shows  $4 \times 2 = 8$ ?



3. Write a multiplication fact shown by the red lines on this number line.



4. Three quarts =   ? pints.
5. When December 15 comes on a Wednesday, the following Wednesday is December   ?.
6. Two girls shared 16¢ equally. Each girl got   ?¢.
7. Which example means the same as the picture?
- $10 \div 5$        $2 \overline{)10}$        $\frac{1}{2}$  of 10
8. How much will eight 2-cent whistles cost?
9. How many inches are there in a foot? in  $\frac{1}{2}$  foot?
10. Can 2 boys share 15 marbles equally? Do a division to prove your answer.

If you have time, try these –

11.  $8 \times 3 = 24$ , so  $24 \div 3 = \underline{\quad}$ .      12.  $4 \times 9 = 36$ , so  $36 \div 9 = \underline{\quad}$ .

## Buying an Easter hat



Debby has \$4.69. She is buying an Easter hat. Estimate how much money she will have left after she buys the hat.

Without help, try to find exactly how much she will have left.

Debby subtracted to find how much she would have left, after she buys the hat.

$$\begin{array}{r}
 4 \text{ dollars } 6 \text{ dimes } 9 \text{ pennies} \\
 - 2 \text{ dollars } 4 \text{ dimes } 5 \text{ pennies} \\
 \hline
 2 \text{ dollars } 2 \text{ dimes } 4 \text{ pennies}
 \end{array}$$

Here is a way to find  $\$4.69 - \$2.45$ .

- Subtract the pennies.  $9 - 5 = 4$ . Write the 4 in the pennies column.
- Subtract the dimes.  $6 - 4 = 2$ . Write the 2 in the dimes column.
- Subtract the dollars.  $4 - 2 = 2$ . Write the 2 in the dollars column.

$$\begin{array}{r}
 \$4.69 \\
 - 2.45 \\
 \hline
 \$2.24
 \end{array}$$

1. Jane has \$3.95. Ann has \$4.98. How much will each girl have left if she buys a hat for \$2.45?

— Copy, write the answers, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
2. $\$5.98$ $- 2.40$ <hr/>	$\$6.73$ $- 2.42$ <hr/>	$\$9.76$ $- .05$ <hr/>	$\$8.74$ $- 3.00$ <hr/>	$\$6.65$ $- 4.25$ <hr/>	$\$6.75$ $- .45$ <hr/>
3. $\$8.09$ $- 4.09$ <hr/>	$\$8.54$ $- .24$ <hr/>	$\$3.00$ $- 2.00$ <hr/>	$\$7.50$ $- .20$ <hr/>	$\$8.73$ $- .63$ <hr/>	$\$5.47$ $- .43$ <hr/>
4. $\$9.45 - \$7.32$	5. $\$7.98 - \$4.43$		6. $\$8.96 - \$6.64$		



# Subtracting three-place numbers

Pete has 134 Best Bread stickers. To get a baseball he must send ? stickers.

Can you find how many more stickers Pete needs to get the baseball? Pete subtracted to find out.

$$\begin{array}{r} 3 \text{ hundreds } 7 \text{ tens } 5 \text{ ones} \\ 1 \text{ hundred } 3 \text{ tens } 4 \text{ ones} \\ \hline 2 \text{ hundred } 4 \text{ tens } 1 \text{ one} = 241 \end{array}$$



Here is a short way to find  $375 - 134$ .

Explain the subtraction.

It shows that Pete needs ? more stickers.

Check the subtraction.  $241 + 134 = ?$

	CHECK
375	241
- 134	+ 134
<u>241</u>	<u>375</u>

— Copy, subtract, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 963 \\ 361 \\ \hline \end{array}$	$\begin{array}{r} 865 \\ 431 \\ \hline \end{array}$	$\begin{array}{r} 751 \\ 221 \\ \hline \end{array}$	$\begin{array}{r} 862 \\ 621 \\ \hline \end{array}$	$\begin{array}{r} 872 \\ 162 \\ \hline \end{array}$	$\begin{array}{r} 456 \\ 151 \\ \hline \end{array}$	$\begin{array}{r} 874 \\ 73 \\ \hline \end{array}$	$\begin{array}{r} 943 \\ 21 \\ \hline \end{array}$
2.	$\begin{array}{r} 985 \\ 430 \\ \hline \end{array}$	$\begin{array}{r} 653 \\ 530 \\ \hline \end{array}$	$\begin{array}{r} 653 \\ 442 \\ \hline \end{array}$	$\begin{array}{r} 863 \\ 503 \\ \hline \end{array}$	$\begin{array}{r} 876 \\ 845 \\ \hline \end{array}$	$\begin{array}{r} 647 \\ 41 \\ \hline \end{array}$	$\begin{array}{r} 948 \\ 905 \\ \hline \end{array}$	$\begin{array}{r} 847 \\ 23 \\ \hline \end{array}$

3. Anita has 214 Best Bread stickers. How many more does she need to get a nurse set? a doll? a bracelet?

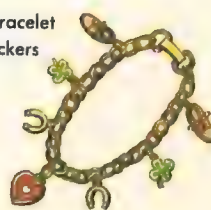
Nurse Set  
475 stickers



Doll  
528 stickers



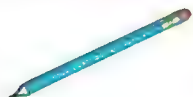
Charm Bracelet  
398 stickers



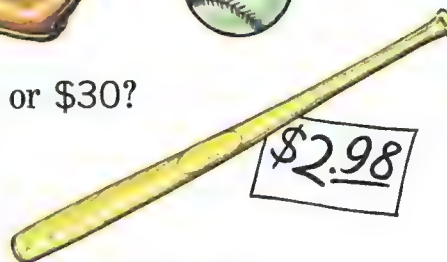
*Practice for excellence.* Do Practice Set 31, page 321.

# Thinking about money

No



please!



1. Which of these costs about \$1?  
about \$2? about \$3?

2. Is  $\$901 - \$692$  about \$300, or \$200, or \$30?

3. Is  $\$7 - \$2.98$  about \$5, or \$4, or \$3?

4. Is  $\$3 + \$4.98$  about \$9, or \$8, or \$7?

5. Which is more, 20 dimes or \$2.05? 32 dimes or \$2.98?

Use your



Check each answer.

*a*

*b*

*c*

6.  $\$8.64 - \$8.52$

$\$3.45 + \$1.00$

$\$2.46 + \$7.28$

7.  $\$.76 - \$.40$

$\$.67 + \$.75$

$\$.45 + \$.38$

8.  $\$8.00 - \$5.00$

$\$5.98 - \$2.78$

$\$1.35 + \$.35$

9.  $\$6.87 - \$.42$

$\$.78 - \$.75$

$\$.25 + \$3.27$

10. Write in figures, using dollar sign and cents point.

• Eighty-five dollars and seventy cents

• Two cents

• Sixty dollars and five cents

• Forty-four cents

11. Jim has 4 half dollars, 2 quarters, a dime, and 4 nickels.  
Has he enough to buy this football?  $\longrightarrow$

12. Subtract \$2.03 from \$4.75. How much is left?



Think twice!

13.  $\$1.40 = 14$  dimes, so  $\$1.40 = \underline{\hspace{1cm}}$  nickels.

14.  $\$6.00 = 12$  half dollars, so  $\$6.00 = \underline{\hspace{1cm}}$  quarters.

15. How many dimes and how many nickels are there in:

\$2.00

\$2.60

\$3.00

\$3.30

# Changing a dime to pennies

HAIRCUT  
\$1.25



Ted has \$2.74. Without help, try to find how much he will have left after he pays for a haircut.

Ted subtracted to find out. He wrote: —→  
Could he subtract 5 pennies from 4 pennies?  
What should he do?

Ted thought: I'll change 1 of the 7 dimes to 10 pennies. That makes 2 dollars, 6 dimes, 14 pennies. —→

► He subtracted the pennies.  $14 - 5 = 9$ .

He wrote the 9 in the pennies column.

► He subtracted the dimes.  $6 - 2 = 4$ .

He wrote the 4 in the dimes column. How did he finish the subtraction?

How much money will he have left?

\$ 2.74

- 1.25

6 14  
\$ 2.74

- 1.25

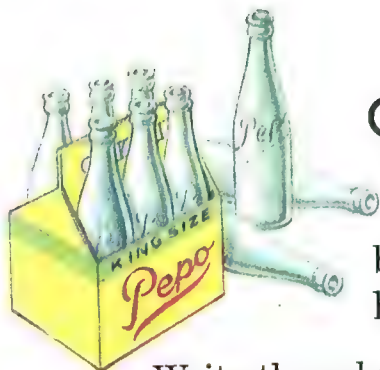
\$ 1.49

— Copy, subtract, and check.

	a	b	c	d	e	f
1. ✓	\$7.90 <u>2.47</u>	\$9.60 <u>8.38</u>	\$4.83 <u>2.78</u>	\$5.74 <u>2.27</u>	\$4.65 <u>.28</u>	\$5.86 <u>5.07</u>
2. ✓	\$6.31 <u>3.28</u>	\$7.67 <u>3.49</u>	\$8.98 <u>3.79</u>	\$9.81 <u>3.66</u>	\$6.90 <u>5.55</u>	\$8.80 <u>2.44</u>
3.	\$9.70 <u>9.43</u>	\$7.73 <u>7.49</u>	\$8.64 <u>8.08</u>	\$3.95 <u>.66</u>	\$8.86 <u>.58</u>	\$9.77 <u>.38</u>

4. Sue has \$2.45. How much more money does she need to buy a raincoat that costs \$5.50? boots that cost \$3.29?





## Changing a ten to ones

Dan and Joe collect and sell empty soft drink bottles. Dan sold 235. Joe sold 128. Without help, find how many more Dan sold than Joe.

Write the subtraction like this:  $\longrightarrow$

Can you subtract 8 ones from 5 ones? What will you do about it?

$$\begin{array}{r} 235 \\ - 128 \\ \hline \end{array}$$

► Change 1 of the 3 tens to 10 ones. Then you will have 2 hundreds **2** tens **15** ones.  $\longrightarrow$

► Subtract the ones.  $15 - 8 = 7$ .

Write the 7 in ones place.

► Subtract the tens.  $2 - 2 = 0$ .

$$\begin{array}{r} 2\overset{2}{\cancel{3}}\overset{15}{5} \\ - 128 \\ \hline 107 \end{array}$$

Write the 0 in tens place. Tell how to finish and check the subtraction. Dan sold   ? more bottles than Joe.

— Copy, subtract, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $\begin{array}{r} 672 \\ 458 \\ \hline \end{array}$	$\begin{array}{r} 531 \\ 217 \\ \hline \end{array}$	$\begin{array}{r} 654 \\ 207 \\ \hline \end{array}$	$\begin{array}{r} 860 \\ 225 \\ \hline \end{array}$	$\begin{array}{r} 376 \\ 329 \\ \hline \end{array}$	$\begin{array}{r} 482 \\ 475 \\ \hline \end{array}$
2. $\begin{array}{r} 490 \\ 283 \\ \hline \end{array}$	$\begin{array}{r} 572 \\ 356 \\ \hline \end{array}$	$\begin{array}{r} 861 \\ 247 \\ \hline \end{array}$	$\begin{array}{r} 763 \\ 407 \\ \hline \end{array}$	$\begin{array}{r} 685 \\ 276 \\ \hline \end{array}$	$\begin{array}{r} 380 \\ 124 \\ \hline \end{array}$

3. Jim collected 170 bottles. He has sold 144 of them. He has   ? more to sell.

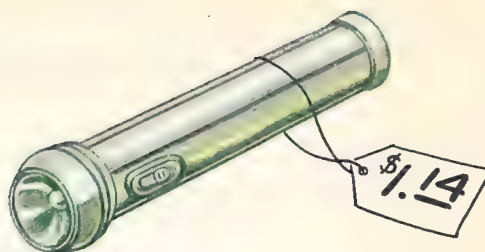
Think twice!

The boys get 2¢ for each bottle they sell. How much do they get for 100 bottles? 125? 200? 235? 248?

*Practice for excellence.* Do Practice Set 32, page 322.

# Subtraction practice

1. Rusty wants to buy this flashlight. He has \$.79. He needs ? more.



2. Sam read from page 128 to page 144 in his reader. He read ? pages.

3. How much change should Lou get from \$2.50 when he spends \$2.37?

4. Jane has \$1.10. Has she enough to buy a package of cake mix and a package of cake frosting mix?  $\longrightarrow$



5. Tom has \$3.39. How much more does he need to buy a dog that costs \$8.50?

6. Ann has \$1.45. Sue has \$2.50. Sue has ? more than Ann.

— Copy, subtract, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
7.	\$6.66 <u>2.18</u>	\$5.92 <u>.55</u>	\$9.28 <u>2.19</u>	\$6.50 <u>2.35</u>	\$7.84 <u>.35</u>	\$8.72 <u>.29</u>
8.	\$5.61 <u>1.37</u>	\$6.53 <u>.46</u>	\$5.97 <u>2.69</u>	\$4.73 <u>1.42</u>	\$5.84 <u>.46</u>	\$7.62 <u>.56</u>
9.	\$.53 <u>.49</u>	\$.67 <u>.59</u>	\$.74 <u>.68</u>	\$.83 <u>.75</u>	55 <u>48</u>	36 <u>27</u>
10.	273 <u>134</u>	492 <u>447</u>	580 <u>269</u>	385 <u>127</u>	473 <u>424</u>	560 <u>326</u>
11.	868 <u>845</u>	952 <u>835</u>	340 <u>118</u>	463 <u>148</u>	576 <u>68</u>	859 <u>36</u>

# Changing a dollar to dimes

Rusty took \$4.05 with him on a trip.  
He had \$1.34 when he came home.

To find how much he spent, he subtracted: →  
He took 4 pennies from 5 pennies and wrote the 1 in the pennies column. Then he tried to take 3 dimes from 0 dimes, but couldn't. What would you have done?

$$\begin{array}{r} \$4.05 \\ - 1.34 \\ \hline ? ? ? \end{array}$$

1. Change one of the 4 dollars to 10 dimes and write the subtraction like this:

Rusty had \$4.05: → 3 dollars 10 dimes 5 pennies  
He had left \$1.34: → 1 dollar 3 dimes 4 pennies  
He spent: → 2 dollars 7 dimes 1 penny  
Rusty spent    dollars and    cents.

2. Tell what you would think and write to subtract \$1.34 from \$4.05 this way: →

$$\begin{array}{r} 3 \ 10 \\ \$4.05 \\ - 1.34 \\ \hline \$2.71 \end{array}$$

3. Subtract \$1.34 from \$4.25. →  
Tell what you think and write to subtract the pennies; the dimes; the dollars.

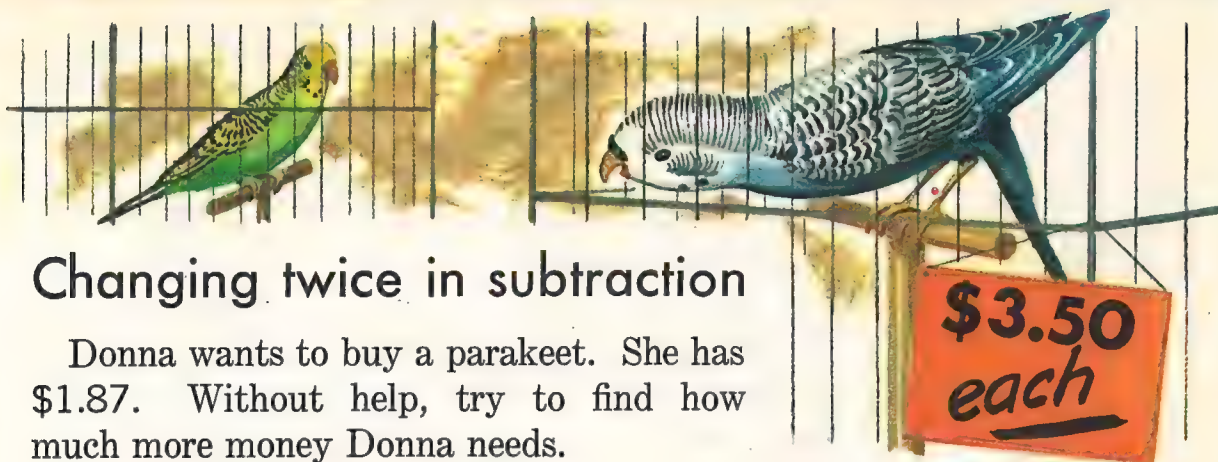
$$\begin{array}{r} 3 \ 12 \\ \$4.25 \\ - 1.34 \\ \hline \$2.91 \end{array}$$

— Copy, subtract, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
4. $\begin{array}{r} \$6.07 \\ 4.83 \\ \hline \end{array}$	$\begin{array}{r} \$4.08 \\ 1.43 \\ \hline \end{array}$	$\begin{array}{r} \$5.06 \\ 3.92 \\ \hline \end{array}$	$\begin{array}{r} \$9.39 \\ 3.85 \\ \hline \end{array}$	$\begin{array}{r} \$4.48 \\ 1.86 \\ \hline \end{array}$	$\begin{array}{r} \$6.27 \\ 2.74 \\ \hline \end{array}$
5. $\begin{array}{r} \$7.05 \\ 2.52 \\ \hline \end{array}$	$\begin{array}{r} \$8.07 \\ 3.84 \\ \hline \end{array}$	$\begin{array}{r} \$8.16 \\ 5.80 \\ \hline \end{array}$	$\begin{array}{r} \$6.19 \\ 3.77 \\ \hline \end{array}$	$\begin{array}{r} \$5.35 \\ 2.52 \\ \hline \end{array}$	$\begin{array}{r} \$9.05 \\ 4.30 \\ \hline \end{array}$

*Practice for excellence.* Do Practice Set 33, page 322.





## Changing twice in subtraction

Donna wants to buy a parakeet. She has \$1.87. Without help, try to find how much more money Donna needs.

- Write the subtraction as shown at the right.  
Can you subtract 7 pennies from 0 pennies?
- *Change one of the 5 dimes to 10 pennies.* Then you will have 3 dollars 4 dimes 10 pennies.
- Subtract the pennies.  $10 - 7 = 3$ . Where will you write the 3?  
Can you subtract 8 dimes from 4 dimes?
- *Change one of the dollars to 10 dimes.* Then you will have 2 dollars 14 dimes.
- Subtract the dimes.  $14 - 8 = 6$ . Where will you write the 6? Tell how to finish and check the subtraction.

$$\begin{array}{r} \$3.50 \\ - 1.87 \\ \hline \end{array}$$

$$\begin{array}{r} \phantom{14} \\ \phantom{2} \cancel{5} 10 \\ \$3.\cancel{5}0 \\ \phantom{1}1.87 \\ \hline \$1.63 \end{array}$$

1. Subtract \$1.87 from \$4.65. Tell what you would think and write to subtract the pennies; the dimes; the dollars.

$$\begin{array}{r} \phantom{15} \\ \phantom{3} \cancel{6} 15 \\ \$4.\cancel{6}5 \\ \phantom{1}1.87 \\ \hline \$2.78 \end{array}$$

— Copy, subtract, and check.

a	b	c	d	e	f
2. $\begin{array}{r} \$5.03 \\ 1.56 \\ \hline \end{array}$	$\begin{array}{r} \$4.51 \\ 3.78 \\ \hline \end{array}$	$\begin{array}{r} 334 \\ 98 \\ \hline \end{array}$	$\begin{array}{r} 510 \\ 148 \\ \hline \end{array}$	$\begin{array}{r} 227 \\ 149 \\ \hline \end{array}$	$\begin{array}{r} 413 \\ 225 \\ \hline \end{array}$
3. $\begin{array}{r} \$3.50 \\ 1.99 \\ \hline \end{array}$	$\begin{array}{r} \$3.62 \\ 1.78 \\ \hline \end{array}$	$\begin{array}{r} 240 \\ 173 \\ \hline \end{array}$	$\begin{array}{r} 311 \\ 293 \\ \hline \end{array}$	$\begin{array}{r} 357 \\ 268 \\ \hline \end{array}$	$\begin{array}{r} 562 \\ 95 \\ \hline \end{array}$



## Subtraction practice

1. Nan wants this cuckoo clock. She has \$7.87. How much more does she need?
2. At a sale, Jim got \$7.25 boxing gloves for \$6.50. He saved   ? by buying at the sale.
3. Tim has \$4.35. If he pays \$2.60 for a T-shirt, how much will he have left?
4. Danny has \$1.25 in his pocket. \$.59 of it belongs to his mother. The rest, or   ?, is Danny's.
5. A pen and pencil set costs \$2.19. The pen alone costs \$1.25, so the pencil in the set costs   ?.
6. What is the difference between \$3.67 and \$5.42?



— Copy, subtract, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
7.	$\begin{array}{r} 725 \\ 348 \\ \hline \end{array}$	$\begin{array}{r} 546 \\ 159 \\ \hline \end{array}$	$\begin{array}{r} 463 \\ 178 \\ \hline \end{array}$	$\begin{array}{r} 475 \\ 398 \\ \hline \end{array}$	$\begin{array}{r} 574 \\ 287 \\ \hline \end{array}$	$\begin{array}{r} 687 \\ 93 \\ \hline \end{array}$
8.	$\begin{array}{r} 532 \\ 319 \\ \hline \end{array}$	$\begin{array}{r} 446 \\ 388 \\ \hline \end{array}$	$\begin{array}{r} 483 \\ 235 \\ \hline \end{array}$	$\begin{array}{r} 586 \\ 293 \\ \hline \end{array}$	$\begin{array}{r} 462 \\ 88 \\ \hline \end{array}$	$\begin{array}{r} 733 \\ 259 \\ \hline \end{array}$
9.	$\begin{array}{r} 460 \\ 186 \\ \hline \end{array}$	$\begin{array}{r} 942 \\ 296 \\ \hline \end{array}$	$\begin{array}{r} 743 \\ 257 \\ \hline \end{array}$	$\begin{array}{r} 984 \\ 799 \\ \hline \end{array}$	$\begin{array}{r} 770 \\ 488 \\ \hline \end{array}$	$\begin{array}{r} 965 \\ 98 \\ \hline \end{array}$
10.	$\begin{array}{r} 345 \\ 166 \\ \hline \end{array}$	$\begin{array}{r} 266 \\ 85 \\ \hline \end{array}$	$\begin{array}{r} 441 \\ 297 \\ \hline \end{array}$	$\begin{array}{r} 963 \\ 688 \\ \hline \end{array}$	$\begin{array}{r} 340 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 510 \\ 464 \\ \hline \end{array}$
11.	$\begin{array}{r} \$5.10 \\ 2.25 \\ \hline \end{array}$	$\begin{array}{r} \$4.67 \\ 1.76 \\ \hline \end{array}$	$\begin{array}{r} \$6.35 \\ 5.45 \\ \hline \end{array}$	$\begin{array}{r} \$5.45 \\ .55 \\ \hline \end{array}$	$\begin{array}{r} \$3.68 \\ .90 \\ \hline \end{array}$	$\begin{array}{r} \$9.57 \\ .08 \\ \hline \end{array}$

*Practice for excellence.* Do Practice Set 34, page 322.

# No pencils, please

1. Tom has a new bicycle. He is letting his friends take 5-minute rides on it. How many boys will get a ride in a half hour? Use a clock to prove your answer.

2.  $500 + 60 + 4 = ?$     3.  $800 + 7 = ?$     4.  $700 + 70 = ?$

5. When the thermometer changes from  $57^{\circ}$  to  $45^{\circ}$ , the air becomes  $?$  degrees cooler.

6. Add 8 to each of the following numbers; add 9.

34      76      53      61      87      75      19

7. Read these prices: \$.54    \$9.02    \$.04    \$10.10

8. Tell what coins you could get in change from a half dollar after spending 35¢.

9. What is  $\frac{1}{5}$  of 25?    35?    15?    45?

10. At 5¢ each, find the cost of 8 balls; 7 balls; 9; 6.

11. Count by 5's to 50; by 3's to 30; by 2's to 20.

12. Divide each of the following numbers by 5.

16      27      38      41      23      12      46

13. Could you dip the water out of a barrel more quickly with a quart measure or with a gallon measure?

14. If you laid out 37 pennies in rows of 10, you would have  $?$  rows of 10 pennies and  $?$  extra pennies.

15. Which of these are rectangles?

 a dime    a dollar bill    a stamp



J U N E F    F U N    ●    ●    ●

How much is this? Ten, ten, double ten, forty-five, and fifteen.



# Changing dollars to dimes and pennies



- Pick up five one-dollar bills and try to give someone \$3.24. Can you do it? Why not?
- Change one of the dollar bills to 10 dimes. Now you have 4 dollars, 10 dimes, and 0 pennies. Can you give \$3.24 away? Why not?
- Change one of the dimes to 10 pennies. Now you have   ?   dollars,   ?   dimes,   ?   pennies. Can you give \$3.24 away now? Explain.

1. Subtract to find how much you have left.

You have \$5.00  $\longrightarrow$  4 dollars 9 dimes 10 pennies  
 You gave away \$3.24  $\rightarrow$  3 dollars 2 dimes 4 pennies  
 You have left  $\longrightarrow$    ?   dollar   ?   dimes   ?   pennies, or   ?  .

2. Ted has four one-dollar bills. He owes Sam \$1.16. Use dollars, dimes, and pennies to show how Ted must change his money so he can pay Sam.

3. Subtract to show how much money Ted will have left.

Ted has \$4.00  $\longrightarrow$  3 dollars 9 dimes 10 pennies  
 He gave Sam \$1.16  $\rightarrow$  1 dollar 1 dime 6 pennies  
 He has left  $\longrightarrow$    ?   dollars   ?   dimes   ?   pennies, or   ?  .

4. \$2.00 = 1 dollar 9 dimes   ?   pennies.
5. \$3.00 = 2 dollars   ?   dimes 10 pennies.
6. 400 = 3 hundreds 9 tens   ?   ones.
7. 200 = 1 hundred   ?   tens 10 ones.



# More about changing dollars

1. Jane has \$5.00. Use dollars, dimes, and pennies to show how much she will have left if she spends:

\$2.40      \$2.43      \$3.60      \$3.64      \$4.75

2. Jane found  $\$5.00 - \$2.40$  like this:  $\longrightarrow$

- Why did she cross off the zero in dimes column and write 10 above it?
- Why did she cross off the 5 in dollars column and write 4 above it?
- Tell how to finish the subtraction.

$$\begin{array}{r} 4 \text{ } 10 \\ \$5.\cancel{0} 0 \\ - 2.4 0 \\ \hline \$2.6 0 \end{array}$$

3. Pete found  $\$5.00 - \$2.43$  like this:  $\longrightarrow$

- He changed 5 dollars to    dollars    dimes.
- What did he do next? Explain.
- Tell how to finish the subtraction.

$$\begin{array}{r} 9 \text{ } 10 \\ 4 \text{ } 10 \\ \$5.\cancel{0} \cancel{0} \\ - 2.4 3 \\ \hline \$2.5 7 \end{array}$$

— Copy, subtract, and check.

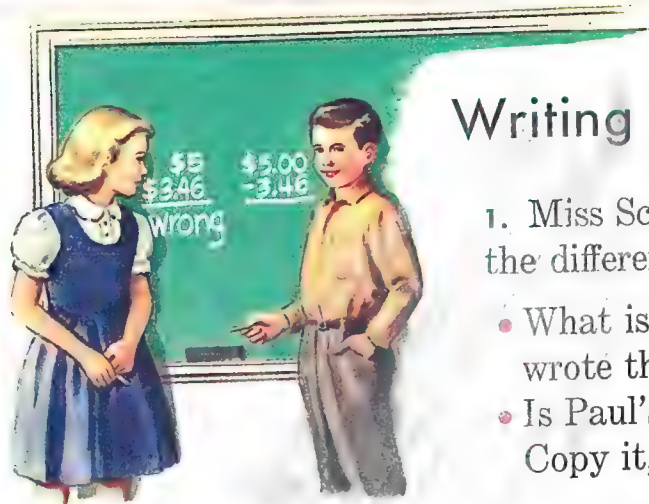
	a	b	c	d	e	f
4.	$\begin{array}{r} \$6.00 \\ - 4.78 \\ \hline \end{array}$	$\begin{array}{r} \$8.00 \\ - 2.63 \\ \hline \end{array}$	$\begin{array}{r} \$2.00 \\ - 1.75 \\ \hline \end{array}$	$\begin{array}{r} \$9.00 \\ - 8.97 \\ \hline \end{array}$	$\begin{array}{r} \$5.00 \\ - 3.64 \\ \hline \end{array}$	$\begin{array}{r} \$7.00 \\ - 2.28 \\ \hline \end{array}$
5.	$\begin{array}{r} 700 \\ - 345 \\ \hline \end{array}$	$\begin{array}{r} 500 \\ - 156 \\ \hline \end{array}$	$\begin{array}{r} 400 \\ - 276 \\ \hline \end{array}$	$\begin{array}{r} 300 \\ - 198 \\ \hline \end{array}$	$\begin{array}{r} 800 \\ - 483 \\ \hline \end{array}$	$\begin{array}{r} 500 \\ - 225 \\ \hline \end{array}$
6.	$\begin{array}{r} 380 \\ - 276 \\ \hline \end{array}$	$\begin{array}{r} 534 \\ - 519 \\ \hline \end{array}$	$\begin{array}{r} 802 \\ - 275 \\ \hline \end{array}$	$\begin{array}{r} 700 \\ - 156 \\ \hline \end{array}$	$\begin{array}{r} 385 \\ - 26 \\ \hline \end{array}$	$\begin{array}{r} 900 \\ - 482 \\ \hline \end{array}$

Think twice!

Here is a shorter way to find  $\$5.00 - \$2.43$ :  $\rightarrow$   
Tell what you would think and write to do the subtraction this way.

$$\begin{array}{r} 49 \text{ } 10 \\ \$5.\cancel{0} \cancel{0} \\ - 2.4 3 \\ \hline \$2.5 7 \end{array}$$

*Practice for excellence.* Do Practice Set 35, page 323.



## Writing subtraction correctly

1. Miss Scott asked Diana and Paul to find the difference between \$5 and \$3.46.

- What is wrong with the way Diana wrote the subtraction?
- Is Paul's subtraction written correctly? Copy it, and find the answer.

2. How much change will you get from a 5-dollar bill if you spend \$2.45? \$.67? \$1.23? \$4.76?

— Copy, subtract, and check.

3.  $\$9 - \$1.28$

$\$10 - \$1.58$

$\$5 - \$2.65$

4.  $\$5 - \$1.09$

$\$3 - \$2.98$

$\$3 - \$1.27$

5.  $\$7 - \$0.79$

$\$9.80 - \$3$

$\$4 - \$0.29$

6.  $\$6 - \$0.43$

$\$7 - \$2.04$

$\$12 - \$6.43$

7.  $\$4.95 - \$2$

$\$10 - \$0.39$

$\$7 - \$0.03$

8.  $\begin{array}{r} 700 \\ - 345 \\ \hline \end{array}$

$\begin{array}{r} 400 \\ - 276 \\ \hline \end{array}$

$\begin{array}{r} 800 \\ - 483 \\ \hline \end{array}$

$\begin{array}{r} 500 \\ - 125 \\ \hline \end{array}$

$\begin{array}{r} 600 \\ - 75 \\ \hline \end{array}$

$\begin{array}{r} 500 \\ - 469 \\ \hline \end{array}$

$\begin{array}{r} 300 \\ - 197 \\ \hline \end{array}$

Think twice!

Find the answers to Exercises 3 through 7 without using pencil and paper. Here is a way to do Exercise 3a. Think of \$1.28 as \$1.00, \$.20, and \$.08. Then think:

$\$9 - \$1 = \$8$ ;  $\$8 - \$0.20 = \$7.80$ ;  $\$7.80 - \$0.08 = \$7.72$ .

*Practice for excellence.* Do Practice Set 36, page 323.



## Practice and review

— Do not use your pencil for Exercises 1 to 18.

1. Is  $701 - 690$  about 100, about 10, or about 1?
2. Is  $\$6 - \$2.98$  about \$4, about \$2, or about \$3?
3. Is  $\$2 + \$3.95$  about \$5, about \$6, or about \$7?
4. Is the answer to  $\$1.56 + \$3.00$  between \$4 and \$5?
5. 9 from 26 = ?
6.  $18 + N = 25$
7. 17 from 25 = ?
8.  $9 + 8 + 7 = ?$
9.  $16 + 8 = ?$
10.  $26 + 7 = ?$
11. Subtract 40 from 53.
12.  $\$1.00 - \$0.10 = ?$
13.  $\$1.00 - \$0.01 = ?$
14. 5 is 9 less than ?
15. 13 is ? more than 8.
16.  $50 + 10 + 5 + 4 = ?$
17. Count by 3's to 30.
18. Count by 4's to 40.

— Estimate each answer. Then copy, add, and check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
19.	297 200 <u>486</u>	149 175 <u>638</u>	203 289 <u>465</u>	425 263 <u>187</u>	358 389 <u>174</u>	546 278 <u>109</u>
20.	716 9 <u>65</u>	27 74 <u>365</u>	808 87 <u>8</u>	60 697 <u>58</u>	9 47 <u>565</u>	700 398 <u>46</u>
21.	\$6.10 3.39 <u>8.65</u>	\$4.25 .72 <u>7.98</u>	\$9.89 .47 <u>.03</u>	\$3.75 5.50 <u>.29</u>	\$8.05 .03 <u>3.69</u>	\$5.27 6.32 <u>.04</u>



## Camp clothing sale

- How much can Ann save by buying shorts at the sale? sneakers? a swim suit?
- How much can Jim save by buying a shirt at the sale? a sweater? swim trunks?
- At the sale, find the cost of:
  - 2 pairs of shorts.
  - a sweater and a pair of sneakers.
  - a pair of shorts and a shirt.
  - a swim suit and swim trunks.
- Ted has \$2.50. How much more does he need to buy sneakers? a sweater?
- Joe has \$5.00. How much will he have left if he buys trunks? a pair of shorts?
- How much more does a sweater cost than sneakers?

# Keeping up in arithmetic

## Oral

1. 70 more than 620 = ?                      50 less than 890 = ?
2. Ann has three boxes of crayons. There are five crayons in each box. How many crayons has she in all?
3. How many 8-cent toys can you get for 40¢?
4. A pony ride costs 5¢. Jane has 47¢. She has enough to pay for rides for ? children. She will have ?¢ left.
5. Does  $802 - 397$  equal about 500, about 400, or about 300?
6. Does  $402 - 292$  equal about 100, or about 10?

## Written

1. Bill bought a pair of hamsters for \$2.75 and a cage for \$2.98. How much did he spend in all?
2. James had 52 newspapers to sell. He sold all but 14. How many papers did he sell?

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
3.	$\begin{array}{r} 400 \\ - 275 \\ \hline \end{array}$	$\begin{array}{r} 575 \\ - 489 \\ \hline \end{array}$	$\begin{array}{r} 363 \\ - 154 \\ \hline \end{array}$	$\begin{array}{r} \$4.56 \\ - .69 \\ \hline \end{array}$	$\begin{array}{r} \$4.95 \\ - 2.77 \\ \hline \end{array}$	$\begin{array}{r} \$3.30 \\ - 1.52 \\ \hline \end{array}$
4.	$\begin{array}{r} 963 \\ - 287 \\ \hline \end{array}$	$\begin{array}{r} 846 \\ - 772 \\ \hline \end{array}$	$\begin{array}{r} 604 \\ - 597 \\ \hline \end{array}$	$\begin{array}{r} \$5.00 \\ - 2.87 \\ \hline \end{array}$	$\begin{array}{r} \$6.00 \\ - .70 \\ \hline \end{array}$	$\begin{array}{r} \$8.00 \\ - .95 \\ \hline \end{array}$
5.	$\begin{array}{r} \$4.65 \\ 8.23 \\ 4.45 \\ + 5.67 \\ \hline \end{array}$	$\begin{array}{r} \$6.84 \\ 3.05 \\ .76 \\ + 4.83 \\ \hline \end{array}$	$\begin{array}{r} \$2.56 \\ 4.38 \\ 5.73 \\ + .07 \\ \hline \end{array}$	$\begin{array}{r} \$4.25 \\ 6.38 \\ 5.46 \\ + 8.24 \\ \hline \end{array}$	$\begin{array}{r} \$3.46 \\ 8.32 \\ .96 \\ + 5.87 \\ \hline \end{array}$	$\begin{array}{r} \$7.45 \\ .59 \\ .68 \\ + 4.95 \\ \hline \end{array}$

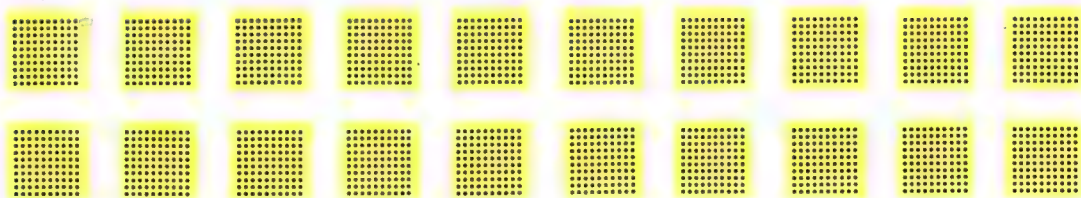




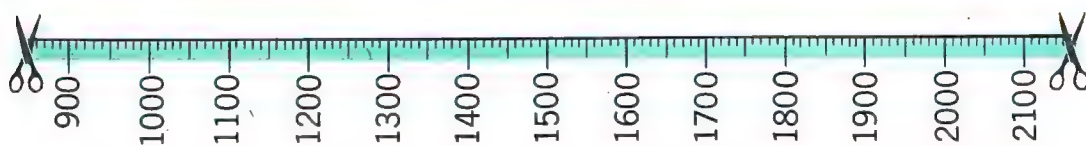
## Counting by hundreds

1. Tom has a peg board. It holds 10 rows of pegs, with 10 pegs in each row. How many pegs can he put into the board?

2. Each peg board below has   ?   pegs. Count by 100's to find how many pegs are needed to fill the boards in the top row; in both rows.



3. This number line is cut off at each end.



- What printed numbers were cut off at the left?
- What would the next five printed numbers be, if the line were not cut off at the right?
- What numbers do the little black lines between 900 and 1,000 stand for?

4. Count by 10's from 1200 (12 hundred) to 1400 (14 hundred); from 1800 (18 hundred) to 2000 (20 hundred).

5. Write the hundreds from 1000 to 2500 like this:  $\longrightarrow$

1000	(10 hundred)
1100	(11 hundred)
1200	(12 hundred)

# Reading and writing thousands

Ten hundred is also called *one thousand*. (1,000)

Twenty hundred is called *two thousand*. (2,000)

We usually place a comma after the digit that shows how many thousands.

1. Read: 4,000    5,000    8,000    6,000    9,000    10,000

2. Write the thousands from 1,000 to 9,000, like this:  $\longrightarrow$

1,000	(1 thousand)
2,000	(2 thousand)

3. 2,700 is read "2 thousand 7 hundred."

2,370 is read "2 thousand 3 hundred 70."

Read these: 2,374            2,074            2,070            2,004

4. Read each of these numbers. Then write each number as your teacher says it.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
4,769	3,074	5,247	7,981	6,666	5,900
5,600	5,000	1,200	9,099	8,008	4,404

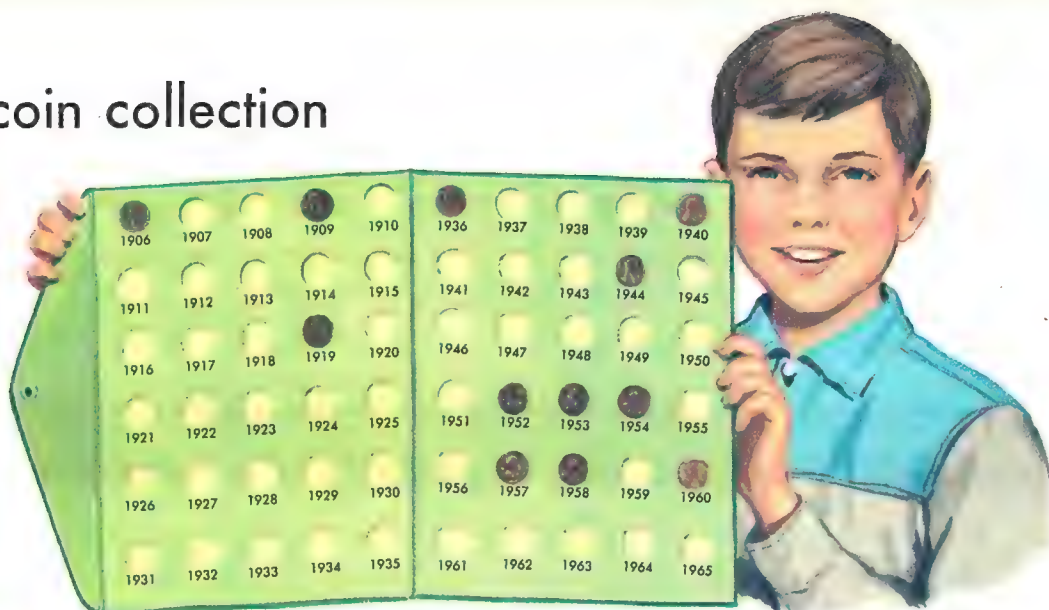
5. The box shows  $7,000 + 500 + 80 + 4$ . Read the answer. The comma has been placed three places from the right. Explain why.

7 000
500
80
4
<hr/>
7,584

— Write the answer to each addition example below.

<i>a</i>	<i>b</i>	<i>c</i>
6. $3,000 + 600 + 70 + 4$	$6,000 + 700 + 4$	$8,000 + 60$
7. $6,000 + 700 + 60 + 5$	$8,000 + 70 + 3$	$9,000 + 5$
8. $5,000 + 300 + 20 + 3$	$7,000 + 50 + 5$	$6,000 + 4$

# A coin collection



Dan is collecting pennies in this folder. He puts each penny in its proper place. How can he tell where they go?

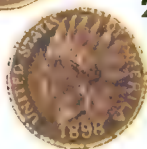
The first penny in Dan's folder was made in 1906. 1906 is read "Nineteen hundred six".



1. Dan's folder will hold pennies from the year   ? to the year   ?.

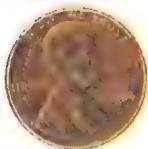


2. For which of these years does Dan have pennies?



1908	1919	1937	1946	1957
1913	1930	1940	1950	1960

3. Count by 5's to find how many pennies Dan's folder will hold. How many pennies are in the folder now?



4. The folder holds 60¢. Dan has 12¢ in the folder now. How many more pennies does he need?



5. Look at the pennies in the margin. Which one is the oldest? Which is the newest? Which is nearest your age?

6. Which of the pennies in the margin does Dan need for his folder?



# Addition practice

— Write the sums on folded paper. Check each example.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 9 \\ 3 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 9 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 3 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 5 \\ 9 \\ \hline \end{array}$

2.	$\begin{array}{r} 4 \\ 9 \\ 3 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ 6 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 7 \\ 4 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ 9 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 7 \\ 4 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 8 \\ 3 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 9 \\ 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 8 \\ 6 \\ 4 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

3.	$\begin{array}{r} 36 \\ 72 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 93 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 65 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 49 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 68 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

4.	$\begin{array}{r} 43 \\ 75 \\ 89 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ 65 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 86 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 95 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 79 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ 58 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 98 \\ 88 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 99 \\ 68 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

5.	$\begin{array}{r} 64 \\ 79 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ 86 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 77 \\ 96 \\ 83 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 70 \\ 84 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ 75 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 94 \\ 76 \\ 85 \\ \hline \end{array}$	$\begin{array}{r} 61 \\ 83 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ 28 \\ 35 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

6.	$\begin{array}{r} 84 \\ 5 \\ 39 \\ 96 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 57 \\ 89 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 59 \\ 86 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 94 \\ 8 \\ 86 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ 9 \\ 87 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 96 \\ 9 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 93 \\ 9 \\ 9 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ 8 \\ 89 \\ 76 \\ \hline \end{array}$
----	--	--	--	--	---	---	---	--

7.	$\begin{array}{r} \$ .90 \\ .36 \\ .45 \\ \hline \end{array}$	$\begin{array}{r} \$ .12 \\ .79 \\ .75 \\ \hline \end{array}$	$\begin{array}{r} \$ .49 \\ .05 \\ .60 \\ \hline \end{array}$	$\begin{array}{r} \$ .88 \\ .20 \\ .03 \\ \hline \end{array}$	$\begin{array}{r} \$ .50 \\ .04 \\ .89 \\ \hline \end{array}$	$\begin{array}{r} \$ .40 \\ .10 \\ .74 \\ \hline \end{array}$	$\begin{array}{r} \$ .95 \\ .26 \\ .75 \\ \hline \end{array}$	$\begin{array}{r} \$ .05 \\ .98 \\ .37 \\ \hline \end{array}$
----	---	---	---	---	---	---	---	---

# Subtraction practice

— In which of these subtractions do you change a ten?  
a hundred? a ten and a hundred? Copy, subtract, check.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 60 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} \$4.40 \\ .19 \\ \hline \end{array}$	$\begin{array}{r} \$6.60 \\ .49 \\ \hline \end{array}$
2.	$\begin{array}{r} 82 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 94 \\ 87 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 65 \\ \hline \end{array}$	$\begin{array}{r} 83 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} \$4.43 \\ .37 \\ \hline \end{array}$	$\begin{array}{r} \$6.60 \\ .56 \\ \hline \end{array}$
3.	$\begin{array}{r} 252 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 388 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} 468 \\ 83 \\ \hline \end{array}$	$\begin{array}{r} 463 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 254 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} \$4.70 \\ .98 \\ \hline \end{array}$	$\begin{array}{r} \$5.81 \\ .82 \\ \hline \end{array}$
4.	$\begin{array}{r} 284 \\ 78 \\ \hline \end{array}$	$\begin{array}{r} 356 \\ 49 \\ \hline \end{array}$	$\begin{array}{r} 340 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 251 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 460 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} \$7.83 \\ .76 \\ \hline \end{array}$	$\begin{array}{r} \$6.54 \\ .47 \\ \hline \end{array}$
5.	$\begin{array}{r} 215 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 413 \\ 54 \\ \hline \end{array}$	$\begin{array}{r} 817 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 117 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} 216 \\ 169 \\ \hline \end{array}$	$\begin{array}{r} \$7.17 \\ .88 \\ \hline \end{array}$	$\begin{array}{r} \$5.10 \\ 2.76 \\ \hline \end{array}$
6.	$\begin{array}{r} 700 \\ 350 \\ \hline \end{array}$	$\begin{array}{r} 800 \\ 227 \\ \hline \end{array}$	$\begin{array}{r} 500 \\ 476 \\ \hline \end{array}$	$\begin{array}{r} 600 \\ 284 \\ \hline \end{array}$	$\begin{array}{r} 400 \\ 283 \\ \hline \end{array}$	$\begin{array}{r} \$9.00 \\ 2.35 \\ \hline \end{array}$	$\begin{array}{r} \$3.00 \\ 1.98 \\ \hline \end{array}$
7.	$\begin{array}{r} 607 \\ 248 \\ \hline \end{array}$	$\begin{array}{r} 407 \\ 299 \\ \hline \end{array}$	$\begin{array}{r} 608 \\ 248 \\ \hline \end{array}$	$\begin{array}{r} 705 \\ 195 \\ \hline \end{array}$	$\begin{array}{r} 802 \\ 398 \\ \hline \end{array}$	$\begin{array}{r} \$5.07 \\ 2.35 \\ \hline \end{array}$	$\begin{array}{r} \$6.01 \\ 2.98 \\ \hline \end{array}$
8.	$\begin{array}{r} 804 \\ 628 \\ \hline \end{array}$	$\begin{array}{r} 623 \\ 257 \\ \hline \end{array}$	$\begin{array}{r} 456 \\ 208 \\ \hline \end{array}$	$\begin{array}{r} 789 \\ 456 \\ \hline \end{array}$	$\begin{array}{r} 123 \\ 113 \\ \hline \end{array}$	$\begin{array}{r} \$5.35 \\ 2.65 \\ \hline \end{array}$	$\begin{array}{r} \$4.03 \\ 1.89 \\ \hline \end{array}$
9.	$\begin{array}{r} 689 \\ 345 \\ \hline \end{array}$	$\begin{array}{r} 842 \\ 769 \\ \hline \end{array}$	$\begin{array}{r} 720 \\ 580 \\ \hline \end{array}$	$\begin{array}{r} 321 \\ 181 \\ \hline \end{array}$	$\begin{array}{r} 624 \\ 587 \\ \hline \end{array}$	$\begin{array}{r} \$5.68 \\ 2.59 \\ \hline \end{array}$	$\begin{array}{r} \$6.02 \\ 1.28 \\ \hline \end{array}$

## PROBLEM TEST 6



1. The Jones children drink 2 quarts of milk a day. In a week they drink ? quarts.
2. How many pieces 1 foot long can Irene cut from a cord that is 2 yards long?
3. Jim bought 2 cars for his electric train. The freight car cost \$2.65. The flat car cost \$2.49. Both cost ?.
4. When the thermometer changes from  $48^{\circ}$  to  $64^{\circ}$  how much does the temperature rise?
5. Two boys gathered 18 pine cones. If they share them equally, each will get ? cones.
6. Find the cost of 5 pencils at 9¢ each.
7. Jim caught a fish that weighs  $\frac{1}{2}$  pound. Sam's fish weighs 10 ounces. Whose fish is heavier? How much heavier?
8. One melon serves 2 persons. How many melons are needed to serve 10 persons?
9. Don paid \$6.19 for snow boots. How much change did he get from a 10-dollar bill?
10. A set of 5 flags cost \$9.95. Do you estimate the cost of each flag is about \$1.00, about \$1.50, or about \$2.00?

Write your score on your Problem Test Record.

Think twice!

Anne is 5 years younger than John.  
Kathy is 11 years older than Anne.  
Kathy is 19 years old.  
How old is Anne? John?







— Copy, subtract, and check.

$$\begin{array}{r} 1. \quad 782 \\ - 456 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 731 \\ - 359 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \$9.86 \\ - 4.38 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$8.00 \\ - 3.64 \\ \hline \end{array}$$

5. Find the difference between 943 and 87.
6. Write with digits: two thousand 4 hundred sixty-one.
7. How much change will you get from \$5.00 if you pay \$3.95 for a sweater? Be sure your answer is sensible.
8. Copy these numbers in order. Begin with the smallest.  
8,800                      8,080                      8,008
9. If you change the 8 to 5 in 4,872 the number becomes   ?   less.
10. Puzzle: There are two numbers whose sum is 890. One of the numbers is 250. What is the other number?

**If you have time, try these –**

11. What number does N stand for?

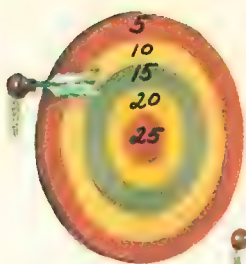
$$472 + 100 + N = 850$$

12. Without using a pencil find the cost of 5 pairs of play shoes at \$3.05 each. Then write your answer.



J U S T F O R F U N

- Together Bill and Joe have \$1.10. Bill has \$1.00 more than Joe. How much does each have?
- What will be the date 10 days from today? 10 years from today? 100 years from today?



## Zeros in multiplication

1. Jeff threw two darts. What was his score?

Jeff's score for each throw was zero. Here are two ways to find his total score,  $0 + 0 = 0$ , and  $2 \times 0 = 0$ .

2. The first addition below shows that 2 zeros ( $2 \times 0$ ) are zero. What multiplications do the other additions show?

- $0 + 0 = 0$
- $0 + 0 + 0 = 0$
- $0 + 0 + 0 + 0 = 0$

— Tell the missing numbers.

- 3.  $5 \times 4 = 20$ , so  $4 \times 5 = ?$
- 4.  $5 \times 3 = 15$ , so  $3 \times 5 = ?$
- 5.  $5 \times 2 = 10$ , so  $2 \times 5 = ?$
- 6.  $5 \times 1 = 5$ , so  $1 \times 5 = ?$
- 7.  $5 \times 0 = 0$ , so  $0 \times 5 = ?$

8. Write an addition and a multiplication to show that:

5 zeros are zero

6 zeros are zero

7 zeros are zero

9. Make a rule for finding the answer to any number times zero; zero times any number.

10. Tell the answers to the following examples.

a	b	c	d	e	f	g	h
1	0	4	0	7	6	2	0
$\times 7$	$\times 5$	$\times 1$	$\times 8$	$\times 0$	$\times 1$	$\times 0$	$\times 3$



## Multiplying tens

1. Tell the cost of two 10-cent candy bars; of 3; 4; 5; 6; 7; 8; 9; 10.

2. Read these multiplications and tell the answers.

$$\begin{array}{r} 10 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 2 \\ \hline \end{array}$$

3. There are 20 candy hearts in one bag. How many hearts are there in 3 bags?

In this problem you put together 3 equal groups of 20 hearts. Here are two ways to find  $3 \times 20$ :

- 1 Think:  $20 = 2$  tens;  $3 \times 2$  tens = 6 tens, or 60.  
Three bags of 20 hearts = 60 hearts.

- 2 Find  $3 \times 20$  this way:

► Multiply the ones.  $3 \times 0 = 0$ .

Write 0 in ones place.

► Multiply the tens.  $3 \times 2 = 6$ .

Write 6 in tens place.

3 times 20 hearts = 60 hearts.

Check by adding three 20's.

	CHECK
$\begin{array}{r} 20 \\ \times 3 \\ \hline 60 \end{array}$	$\begin{array}{r} 20 \\ 20 \\ + 20 \\ \hline 60 \end{array}$

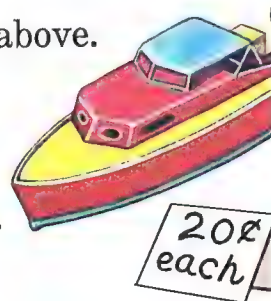
4. Do these multiplications. Use way 1 shown above.

$$\begin{array}{r} 40 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 20 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 20 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 20 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 30 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 2 \\ \hline \end{array}$$

5. Copy Exercise 4 and multiply. Use way 2 shown above.

6. Find the cost of four model boats at 20¢ each.

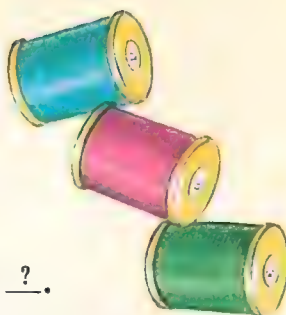
7. Diana made 2 pans of candy. There were 40 pieces in each pan. She made ? pieces of candy.





# Multiplying two-place numbers

First try to find without help, the cost of 3 spools of thread at 12¢ a spool. Then study these two ways of finding the cost.



**1** Add to find the cost of 3 spools of thread.

1 spool  $\rightarrow$  12¢; 3 spools  $\rightarrow$  12¢ + 12¢ + 12¢, or ?.

**2** Multiply to find the cost of 3 spools of thread.

► Multiply the pennies.  $3 \times 2 = 6$ . Write the 6 in pennies column.

► Multiply the dimes.  $3 \times 1 = 3$ . Write the 3 in dimes column. Three spools of thread cost ?.

1 spool	12¢
	$\times 3$
3 spools	<u>36¢</u>

1. Cindy has a box that will hold 2 dozen crayons.

How many crayons are there in 2 dozen?

Find the answer by adding:  $12 + 12 = ?$ .

Now find the answer by multiplying.

► Multiply the ones.  $2 \times 2 = 4$ .

Where will you write the 4?

► Multiply the tens.  $2 \times 1 = 2$ .

Where will you write the 2?

2 dozen crayons = ? crayons.

	CHECK
12	12
$\times 2$	$+ 12$
<u>24</u>	<u>24</u>

— Copy and multiply. Check by adding.

a	b	c	d	e	f	g
2. 22¢	33¢	43¢	24¢	21¢	22¢	44¢
<u>4</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>4</u>	<u>3</u>	<u>2</u>
3. 31	14	12	40	13	20	41
<u>2</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>

Practice for excellence. Do Practice Set 40, page 324.

## Answers of more than a dollar

Sam wanted to multiply \$.51 by 3. First he estimated: “\$.51 is about \$.50. Three times \$.50 is \$1.50. My answer will be about \$1.50.” Was Sam right?

Find the exact answer to  $3 \times \$0.51$ .

► Multiply the pennies.  $3 \times 1 = 3$ .

Write the 3 in pennies column.

► Multiply the dimes.  $3 \times 5 = 15$ .

► *Change the 15 dimes to 1 dollar 5 dimes.*

Write the 5 in dimes column.

Write the 1 in dollars column.  $3 \times \$0.51 = ?$

$$\begin{array}{r} \$0.51 \\ \times 3 \\ \hline \$1.53 \end{array}$$

1. Explain each multiplication. Then copy without the answer and multiply. Are your answers right?

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
\$0.71	\$0.12	\$0.81	\$0.20	\$0.50	\$0.51	\$0.52
$\times 5$	$\times 2$	$\times 2$	$\times 3$	$\times 6$	$\times 8$	$\times 4$
<u>\$3.55</u>	<u>\$0.24</u>	<u>\$1.62</u>	<u>\$0.60</u>	<u>\$3.00</u>	<u>\$4.08</u>	<u>\$2.08</u>

— Copy and multiply.

2. \$0.80	\$0.21	\$0.50	\$0.20	\$0.60	\$0.91	\$0.51
<u>5</u>	<u>6</u>	<u>8</u>	<u>7</u>	<u>5</u>	<u>2</u>	<u>9</u>
3. \$0.52	\$0.91	\$0.50	\$0.81	\$0.41	\$0.22	\$0.71
<u>3</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>2</u>	<u>3</u>	<u>5</u>

4. Find the cost of 5 yards of ribbon at \$.31 a yard; at \$.51 a yard; at \$.71 a yard; at \$.50 a yard.

5. John needs 7 feet of rope for his boat. How much will the rope cost?



21¢  
a foot

# Answers of more than 100



1. A school planted three beds of spring flowers. There are 52 flower plants in each bed. Can you find, without help, how many flowers were planted?

There are 52 plants in each bed, so in 3 beds there are  $3 \times 52$  plants.

► Multiply the ones.  $3 \times 2 = 6$ . Where do you write the 6?

► Multiply the tens.  $3 \times 5 = 15$ .

► *Change 15 tens to 1 hundred 5 tens.*

Where do you write the 1? the 5?

$3 \times 52$  plants =   ?   plants.

$$\begin{array}{r} 52 \\ \times 3 \\ \hline 156 \end{array}$$

— Copy and multiply. Check by adding.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
2.	$\begin{array}{r} 91 \\ 5 \end{array}$	$\begin{array}{r} 70 \\ 5 \end{array}$	$\begin{array}{r} 7 \\ 21 \end{array}$	$\begin{array}{r} 52 \\ 4 \end{array}$	$\begin{array}{r} 92 \\ 2 \end{array}$	$\begin{array}{r} 83 \\ 2 \end{array}$	$\begin{array}{r} 81 \\ 5 \end{array}$	$\begin{array}{r} 31 \\ 5 \end{array}$
3.	$\begin{array}{r} 44 \\ 2 \end{array}$	$\begin{array}{r} 91 \\ 2 \end{array}$	$\begin{array}{r} 63 \\ 2 \end{array}$	$\begin{array}{r} 52 \\ 2 \end{array}$	$\begin{array}{r} 81 \\ 3 \end{array}$	$\begin{array}{r} 73 \\ 2 \end{array}$	$\begin{array}{r} 50 \\ 6 \end{array}$	$\begin{array}{r} 52 \\ 3 \end{array}$
4.	$\begin{array}{r} 74 \\ 2 \end{array}$	$\begin{array}{r} 51 \\ 8 \end{array}$	$\begin{array}{r} 52 \\ 4 \end{array}$	$\begin{array}{r} 81 \\ 2 \end{array}$	$\begin{array}{r} 53 \\ 3 \end{array}$	$\begin{array}{r} 51 \\ 4 \end{array}$	$\begin{array}{r} 92 \\ 2 \end{array}$	$\begin{array}{r} 50 \\ 3 \end{array}$

5. How many pansy plants are needed to make 5 rows, with 31 plants in a row?

6. Jack bought 2 packs of sunflower seed. There are 42 seeds in each pack. How many seeds does he have?



7. Five of these plants will cost   ?  . —————→

8. Find the cost of two 54-cent rose bushes.

30¢ each



*Practice for excellence.* Do Practice Set 41, page 324.



# Changing in multiplication



Jane bought three 25-cent rolls of gift-wrap paper. How much did the 3 rolls cost?

- Find the cost by using dimes and pennies.
- Find the cost by doing an addition.

You can multiply \$.25 by 3 to find the cost of the paper.

- Multiply the pennies.  $3 \times 5 = 15$ .
- Change the 15 pennies to 1 dime 5 pennies.

Write the 5 in pennies column. (Remember the 1 dime.)

- Multiply the dimes.  $3 \times 2 = 6$ . 6 dimes plus 1 dime is 7 dimes. Write the 7.

3 rolls of 25-cent paper cost     . Check by adding.

$$\begin{array}{r} \$.25 \\ \times 3 \\ \hline \$.75 \end{array}$$

1. Jim multiplied 15 by 5.  $\longrightarrow$

He said, “ $5 \times 5$  ones = 25 ones or 2 tens 5 ones. Write the 5 in ones place. Remember the 2 tens.  $5 \times 1$  ten = 5 tens. 5 tens plus 2 tens is 7 tens.” Where did he write the 7?

Does  $5 \times 15 = 75$ ? Check the answer by adding five 15’s.

$$\begin{array}{r} 15 \\ \times 5 \\ \hline 75 \end{array} \quad \begin{array}{r} \text{Check} \\ 15 \\ 15 \\ 15 \\ 15 \\ + 15 \\ \hline 75 \end{array}$$

— Copy and multiply.

	a	b	c	d	e	f	g	h
2.	\$ .19	\$ .57	\$ .15	\$ .16	\$ .25	\$ .23	\$ .15	\$ .24
	<u>5</u>	<u>2</u>	<u>8</u>	<u>2</u>	<u>6</u>	<u>5</u>	<u>3</u>	<u>5</u>
3.	52	25	15	22	25	52	13	25
	<u>6</u>	<u>8</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>7</u>	<u>5</u>	<u>9</u>

Practice for excellence. Do Practice Set 42, page 325.

# Multiplication practice

- |    | <i>a</i>  | <i>b</i>  | <i>c</i>  | <i>d</i>  | <i>e</i>  | <i>f</i>  | <i>g</i>  | <i>h</i>  |
|----|---|---|---|---|---|---|---|---|
| 1. | $\begin{array}{r} \$22 \\ \times 5 \\ \hline \end{array}$ | $\begin{array}{r} \$25 \\ \times 9 \\ \hline \end{array}$ | $\begin{array}{r} \$52 \\ \times 4 \\ \hline \end{array}$ | $\begin{array}{r} \$21 \\ \times 9 \\ \hline \end{array}$ | $\begin{array}{r} \$21 \\ \times 8 \\ \hline \end{array}$ | $\begin{array}{r} \$52 \\ \times 5 \\ \hline \end{array}$ | $\begin{array}{r} \$15 \\ \times 5 \\ \hline \end{array}$ | $\begin{array}{r} \$12 \\ \times 4 \\ \hline \end{array}$ |
| 2. | $\begin{array}{r} \$25 \\ \times 8 \\ \hline \end{array}$ | $\begin{array}{r} \$13 \\ \times 5 \\ \hline \end{array}$ | $\begin{array}{r} \$12 \\ \times 6 \\ \hline \end{array}$ | $\begin{array}{r} \$22 \\ \times 6 \\ \hline \end{array}$ | $\begin{array}{r} \$52 \\ \times 6 \\ \hline \end{array}$ | $\begin{array}{r} \$25 \\ \times 5 \\ \hline \end{array}$ | $\begin{array}{r} \$51 \\ \times 4 \\ \hline \end{array}$ | $\begin{array}{r} \$52 \\ \times 8 \\ \hline \end{array}$ |
| 3. | $\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$   | $\begin{array}{r} 15 \\ \times 2 \\ \hline \end{array}$   | $\begin{array}{r} 51 \\ \times 5 \\ \hline \end{array}$   | $\begin{array}{r} 19 \\ \times 5 \\ \hline \end{array}$   | $\begin{array}{r} 26 \\ \times 5 \\ \hline \end{array}$   | $\begin{array}{r} 15 \\ \times 4 \\ \hline \end{array}$   | $\begin{array}{r} 57 \\ \times 2 \\ \hline \end{array}$   | $\begin{array}{r} 12 \\ \times 7 \\ \hline \end{array}$   |
| 4. | $\begin{array}{r} 51 \\ \times 2 \\ \hline \end{array}$   | $\begin{array}{r} 12 \\ \times 5 \\ \hline \end{array}$   | $\begin{array}{r} 15 \\ \times 8 \\ \hline \end{array}$   | $\begin{array}{r} 27 \\ \times 5 \\ \hline \end{array}$   | $\begin{array}{r} 22 \\ \times 2 \\ \hline \end{array}$   | $\begin{array}{r} 51 \\ \times 9 \\ \hline \end{array}$   | $\begin{array}{r} 15 \\ \times 7 \\ \hline \end{array}$   | $\begin{array}{r} 51 \\ \times 3 \\ \hline \end{array}$   |

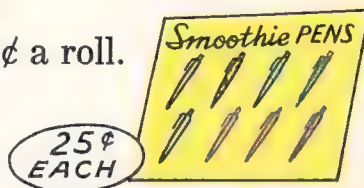
5. Find the cost of 5 rolls of silver ribbon at 12¢ a roll.

6. How much will five of these pens cost?

7. Four boxes of seals at 15¢ a box will cost ?.

8. Jane bought five 15-cent birthday cards. They cost ?.

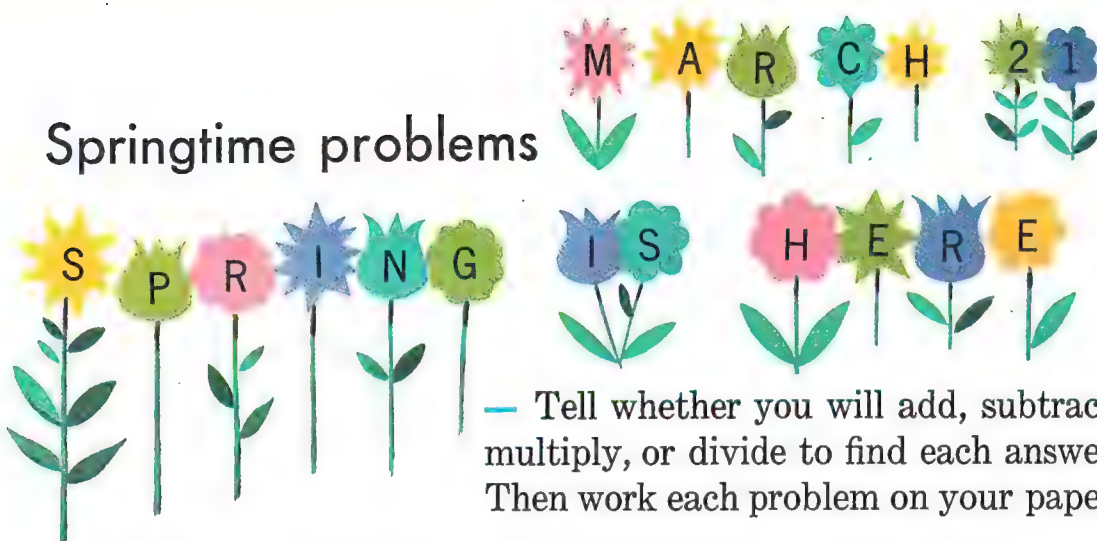
9. 5 ft. = ? in. 5 yd. = ? in. 5 lb. = ? oz.



Think twice! Do Exercises 1 and 2 above, without a pencil.

- Do the first example in Ex. 1, this way:  $\longrightarrow$ 
  - $\$22 = 2$  dimes and 2 pennies.
  - $5 \times 2$  dimes = 10 dimes, or 1 dollar.
  - $5 \times 2$  pennies = 10 pennies, or 10 cents.
  - $5 \times \$22 =$  one dollar and ten cents.
- Do the second example in Ex. 1, this way:  $\longrightarrow$ 
  - $\$25 = 1$  quarter. 4 quarters = \$1.00.
  - 8 quarters = \$2.00. 9 quarters = \$2.25.
  - $9 \times \$25 =$  two dollars and twenty-five cents.

## Springtime problems



— Tell whether you will add, subtract, multiply, or divide to find each answer. Then work each problem on your paper.

1. Debbie made flowers for a spring bulletin board. Look at the picture. How many flowers did she make for the date? for each of the other words? for the whole sign?
2. Debbie made the flowers on March 13. That was   ?   days before time to put them on the bulletin board.



3. Debbie cut 2 flowers from one sheet of paper. How many sheets of paper did she need for the 19 flowers?
4. Here is a picture of Debbie's new spring clothes. How much did they cost?
5. Debbie also bought 2 pairs of white socks at 49¢ a pair. How much did the socks cost?
6. Debbie had 75¢. She spent 39¢. How much did she have left?

**Think twice!**

Debbie wants to color 2 dozen eggs. One package of coloring colors 5 eggs. How many packages of coloring does she need?



## A review

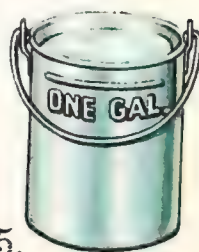
— Copy, add, and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. 79	289	345	\$4.10	\$5.62	\$6.75
63	46	23	1.12	2.84	4.09
23	543	47	2.25	9.73	.77
<u>53</u>	<u>271</u>	<u>721</u>	<u>4.39</u>	<u>4.87</u>	<u>2.83</u>

— Copy, subtract, and check.

2. 380	407	255	\$8.95	\$4.00	\$9.07
<u>254</u>	<u>178</u>	<u>147</u>	<u>6.78</u>	<u>2.76</u>	<u>4.59</u>

- A half dollar is worth 1 quarter, 1 dime, and ? nickels.
- A dollar is worth 3 quarters and ? nickels.
- A dollar is worth 2 quarters and ? dimes.
- A yard = ? feet; a foot = ? inches.
- A quart = ? pints; a gallon = ? quarts.
- What is the largest 3-place number you can write with the figures 7, 5, and 9? the smallest 3-place number?
- There are 5 school days in a week. How many school days are there in 2 weeks? 5 weeks? 9 weeks?
- Susan needs a new hat and coat. If the hat costs \$2.98 and the coat \$9.98, what will be the total cost?
- Tom bought shoes for \$6.95. He paid for them with a 10-dollar bill. How much change did he get?
- Tom gathered this maple syrup. He wants to put it in pint jars. How many pint jars will he need?



KNOW YOUR FACTS Take the tests on pages 134 and 135.

## Be your own teacher OPTIONAL

Good thinkers like to figure things out for themselves. They *teach themselves* how to solve hard problems. See how many ways the class can find to do each problem.

1. Linda wants to serve  $\frac{1}{2}$  of a grapefruit to each of 7 persons. How many grapefruit should she buy?
2. Jane has  $1\frac{1}{2}$  pounds of popcorn, to be shared equally by 3 children. What part of a pound will each get?
3. George has saved 230 pennies. How many quarters can he get for them? How many pennies will be left over?
4. Sue's father bought 13 gallons of gasoline for 25 cents a gallon. He offered to buy her an ice-cream cone if she could figure out the cost of the gasoline. She won the ice-cream cone. Could you have won it?
5. Grace bought  $2\frac{1}{2}$  yards of gingham for a new dress. The gingham cost 40 cents a yard. She gave the clerk a dollar. How much change, if any, did she get?
6. Bob buys meat for his dog. It costs 40¢ a pound. How much money does he need for  $\frac{1}{4}$  pound? for  $\frac{3}{4}$  pound?
7. Tom is going to cut a 10-foot pole into stakes each  $2\frac{1}{2}$  feet long. How many of the stakes can he get? You will need to draw a picture to help you see this.
8. Thirty-five pupils spent \$5.60 for a picnic. Bill had to figure out each pupil's share of the cost.

He thought, "If each one pays 10 cents, I'll collect \$3.50; if each one pays 5 cents more, I'll collect ?"; and so on. Finish Bill's work.

## Dividing zero

$$0 \div 8 = ?$$

$$0 \div 4 = ?$$

1. How many peanuts will Dick and Sue each get if they share equally 12 peanuts? 10 peanuts? 8? 6? 4? 2? 0?

2. Dick says Exercise 1 uses these divisions. Do you agree with him?

$$\begin{array}{r} 6 \\ 2 \overline{)12} \end{array} \quad \begin{array}{r} 5 \\ 2 \overline{)10} \end{array} \quad \begin{array}{r} 4 \\ 2 \overline{)8} \end{array} \quad \begin{array}{r} 3 \\ 2 \overline{)6} \end{array} \quad \begin{array}{r} 2 \\ 2 \overline{)4} \end{array} \quad \begin{array}{r} 1 \\ 2 \overline{)2} \end{array} \quad \begin{array}{r} 0 \\ 2 \overline{)0} \end{array}$$

3. Sue says Exercises 1 and 2 show that zero divided by 2 is zero. Prove that Sue is right.

4. How many peanuts will each of 5 boys get if they share equally 20 peanuts? 15 peanuts? 10? 5? 0?

5. What division do you use in Exercise 4?

6. Does Exercise 4 show that zero divided by 5 is zero?

7. Make a rule for dividing zero by 3; by 4; by 6.

— Tell the answers.

8.  $2 \overline{)0}$

$4 \overline{)0}$

$7 \overline{)0}$

$5 \overline{)0}$

$5 \overline{)0}$

9.  $0 \div 3$

10.  $0 \div 4$

11.  $5 + 0$

12.  $6 - 0$

$3 \times 0$

$4 \times 0$

$5 - 0$

$6 + 0$

$0 + 3$

$4 + 0$

$0 \times 5$

$6 \times 0$

$3 - 0$

$4 - 0$

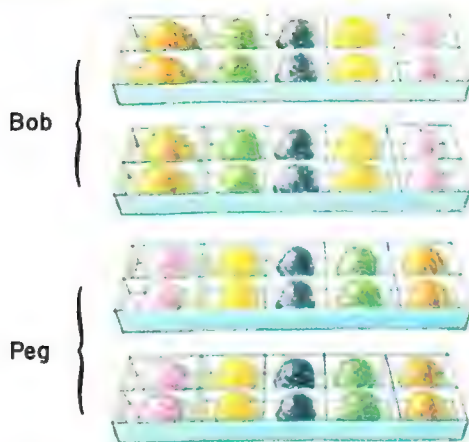
$0 \div 5$

$0 \div 6$

10. Tell a rule for finding the answer when you:

- add zero and any number.
- subtract zero from any number.
- multiply zero and any number.
- divide zero by any number.





## Dividing tens

Bob and Peg want to share these 40 gumdrops equally. How many gumdrops will each of them get?

In this problem you are dividing 40 into 2 equal parts.

Study these two ways of finding  $40 \div 2$ .

- 1** Think:  $40 = 4$  tens.  $\frac{1}{2}$  of 4 tens = 2 tens, or 20.

Bob and Peg will each get 20 gumdrops.

- 2** Write 40 divided by 2 this way:

- Divide the tens.  $4 \div 2 = 2$ .

Write the 2 in tens place over the 4.

- Divide the ones.  $0 \div 2 = 0$ .

Write 0 in ones place.

Check: Think, if each child gets 20 gumdrops, the 2 children will get  $2 \times 20$ , or 40 gumdrops.

$$\begin{array}{r} 20 \\ 2 \overline{)40} \end{array}$$

— Do these divisions. Use way **1** shown above.

1.  $2 \overline{)80}$      $4 \overline{)40}$      $3 \overline{)30}$      $3 \overline{)60}$      $4 \overline{)80}$      $2 \overline{)60}$      $2 \overline{)20}$

2. Copy Exercise 1 and divide. Use way **2** shown above.

3. Three boys shared 60 nuts equally. Each got   ? nuts.

4. 60 third-grade children were divided equally into 2 classes. There were   ? children in each class.

5. Joe and Bill bought 80 stamps. If they share them equally, how many will each get?

# Dividing tens and ones

Jack and Bill have 68 marbles to share equally. Without help, try to find how many marbles each should take.



Study these two ways of writing 68 divided by 2.

**1** Write 68 as 6 tens 8 ones. —————→

- ▶ Divide the tens.  $6 \text{ tens} \div 2 = 3 \text{ tens}$ .
- ▶ Divide the ones.  $8 \text{ ones} \div 2 = 4 \text{ ones}$ .

$$\begin{array}{r} 3 \text{ tens } 4 \text{ ones} \\ 2 \overline{) 6 \text{ tens } 8 \text{ ones}} \end{array}$$

**2** Divide 68 by 2 this way. —————→

Think of 68 as 6 tens 8 ones.

- ▶ Divide the tens.  $6 \div 2 = 3$ . Write the 3 in tens place.
  - ▶ Divide the ones.  $8 \div 2 = 4$ . Write the 4 in ones place.
- Each boy gets   ?   marbles.

$$\begin{array}{r} 34 \\ 2 \overline{) 68} \end{array}$$

Compare the two ways of writing a division. How are they alike? How different? Which is easier to write?

— Copy and divide. Use way **2** shown above.

- |    | <i>a</i>            | <i>b</i>            | <i>c</i>            | <i>d</i>            | <i>e</i>            | <i>f</i>            | <i>g</i>            | <i>h</i>            |
|----|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 1. | $2 \overline{) 86}$ | $3 \overline{) 63}$ | $4 \overline{) 84}$ | $3 \overline{) 66}$ | $2 \overline{) 82}$ | $2 \overline{) 40}$ | $2 \overline{) 64}$ | $2 \overline{) 66}$ |
| 2. | $3 \overline{) 33}$ | $2 \overline{) 28}$ | $3 \overline{) 36}$ | $5 \overline{) 55}$ | $4 \overline{) 48}$ | $2 \overline{) 48}$ | $2 \overline{) 80}$ | $2 \overline{) 84}$ |

3. How many stamps will each get if 2 children share 46 stamps? 64 stamps? 86? 66?

4. If 1 can of soup makes 2 servings, how many cans are needed for 24 servings? 48? 62? 84? 60?



## Dividing three-place numbers

1. 128 children are going to march two-by-two. Each pair of children will carry a banner. How many banners are needed?

To find the answer Jean divided 128 by 2.

- ▶ Jean thought:  $128 = 12 \text{ tens } 8 \text{ ones}$ .
  - ▶ She divided the tens.  $12 \div 2 = 6$ . She wrote the 6 in tens place, above the 2.
  - ▶ She divided the ones.  $8 \div 2 = 4$ . She wrote the 4 in ones place, above the 8.
  - ▶ Her work shows that  $128 \div 2 = 64$ .
- 128 children, marching two by two, will need 64 banners.

$$\begin{array}{r} 64 \\ 2 \overline{)128} \end{array}$$

— Copy each division. Divide as Jean did.

- | <i>a</i>               | <i>b</i>            | <i>c</i>            | <i>d</i>            | <i>e</i>           | <i>f</i>            | <i>g</i>            |
|------------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| 2. $2 \overline{)146}$ | $2 \overline{)108}$ | $2 \overline{)124}$ | $2 \overline{)162}$ | $2 \overline{)86}$ | $2 \overline{)140}$ | $5 \overline{)250}$ |
| 3. $5 \overline{)205}$ | $2 \overline{)186}$ | $2 \overline{)160}$ | $5 \overline{)105}$ | $2 \overline{)48}$ | $2 \overline{)184}$ | $4 \overline{)208}$ |
| 4. $2 \overline{)168}$ | $2 \overline{)142}$ | $2 \overline{)128}$ | $5 \overline{)350}$ | $2 \overline{)42}$ | $2 \overline{)104}$ | $5 \overline{)150}$ |

5. Find  $\frac{1}{2}$  of 188; of 166; of 144; of 84; of 180.

6. Find  $\frac{1}{5}$  of 355; of 400; of 455; of 100; of 155.

7. How many pairs of children are there in 106 children? 128 children? 142? 164?

8. Two boys have a bag of 146 jelly beans. How many will each boy get if they share them equally?

9. Two girls cut out 108 paper dolls and shared them equally. Each girl got ? paper dolls.





# Sharing money

1. George and Bruce shared 68¢ equally. Use 6 dimes and 8 pennies to find how much each got.

The boys divided to find how much each should get. Why didn't George use a dollar sign in his answer?

GEORGE'S DIVISION

$$\begin{array}{r} 34\text{¢} \\ 2\overline{)68\text{¢}} \end{array}$$

BRUCE'S DIVISION

$$\begin{array}{r} \$ .34 \\ 2\overline{)\$ .68} \end{array}$$

— Copy and divide.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
2. $2\overline{)40\text{¢}}$	$4\overline{)48\text{¢}}$	$5\overline{)50\text{¢}}$	$2\overline{)\$ .46}$	$4\overline{)\$ .84}$
3. $3\overline{)96\text{¢}}$	$2\overline{)40\text{¢}}$	$4\overline{)48\text{¢}}$	$2\overline{)\$ .86}$	$2\overline{)\$ .28}$

4. If 2 boys share \$1.28, will each boy get more than \$1 or less than \$1? How can you tell?

Explain this division. Why is the 6 written above the 2? Why is the 4 written above the 8? Each boy will get   .

$$\begin{array}{r} \$ .64 \\ 2\overline{)\$ 1.28} \end{array}$$

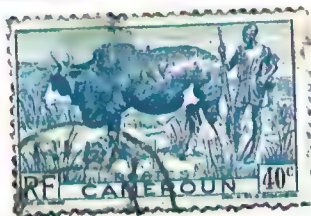
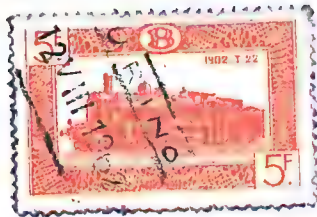
— Copy and divide.

5. $5\overline{)\$ 1.55}$	$2\overline{)\$ 1.68}$	$5\overline{)\$ 3.50}$	$2\overline{)\$ 1.46}$	$6\overline{)\$ 3.00}$
6. $5\overline{)\$ 4.00}$	$2\overline{)\$ 1.80}$	$3\overline{)\$ 1.56}$	$7\overline{)\$ 3.57}$	$6\overline{)\$ 1.20}$
7. $3\overline{)\$ 1.50}$	$4\overline{)\$ 2.00}$	$5\overline{)\$ 2.50}$	$6\overline{)\$ 3.06}$	$2\overline{)\$ 1.60}$

8. Tom paid \$2.50 for 5 arrows. Each arrow cost   .

9. Betty and Jane shared \$1.48 equally. Each girl got   .

*Practice for excellence.* Do Practice Set 47, page 326.



## Remainders

Bob and Dick want to share 47 stamps equally.

Bob said, " $\frac{1}{2}$  of 40 is 20.  $\frac{1}{2}$  of 7 is 3 with 1 left over. So  $\frac{1}{2}$  of 47 stamps is 23 stamps and 1 stamp left over.

"We'll each take 23 stamps. Let's give Ted the 1 stamp that's left over."

To find how many stamps each should take, Dick divided 47 by 2 like this:  $\longrightarrow$

Explain his division. The answer of 23 shows that each boy should take   ?   stamps. There will be   ?   stamp left over, or a remainder of   ?  .

$$\begin{array}{r} 23 \text{ r}1 \\ 2 \overline{)47} \end{array}$$

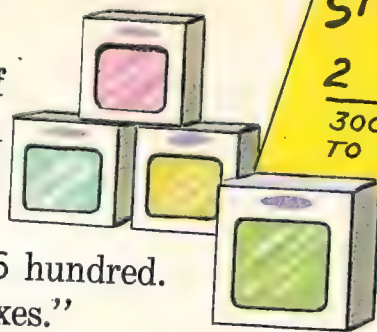
— Copy and divide. Make sure each answer is sensible.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $2 \overline{)85}$	$2 \overline{)109}$	$2 \overline{)143}$	$5 \overline{)156}$	$2 \overline{)129}$	$5 \overline{)457}$
2. $5 \overline{)256}$	$5 \overline{)407}$	$5 \overline{)306}$	$2 \overline{)167}$	$5 \overline{)358}$	$2 \overline{)185}$
3. $2 \overline{)43}$	$2 \overline{)25}$	$2 \overline{)149}$	$5 \overline{)57}$	$2 \overline{)123}$	$5 \overline{)359}$
4. $2 \overline{)45}$	$5 \overline{)107}$	$2 \overline{)183}$	$2 \overline{)87}$	$2 \overline{)105}$	$2 \overline{)125}$
5. $5 \overline{)158}$	$2 \overline{)87}$	$5 \overline{)456}$	$2 \overline{)69}$	$5 \overline{)406}$	$2 \overline{)189}$
6. $5 \overline{)209}$	$2 \overline{)67}$	$5 \overline{)307}$	$2 \overline{)187}$	$5 \overline{)259}$	$2 \overline{)129}$
7. $2 \overline{)163}$	$5 \overline{)409}$	$2 \overline{)147}$	$5 \overline{)308}$	$2 \overline{)107}$	$5 \overline{)207}$

# Multiplying hundreds

1. Sue bought two boxes of paper napkins at the sale. Can you find without help how many napkins she got?

Sue said, " $2 \times 3$  hundred = 6 hundred. I have 600 napkins in the 2 boxes."



**SALE! PAPER NAPKINS**  
**2 boxes 49¢**  
**300 NAPKINS TO THE BOX**

2. Sue could have written the multiplication as shown at the right. Explain how to do it.

$$\begin{array}{r} 300 \\ \times 2 \\ \hline 600 \end{array}$$

3.  $3 \times 2$  hundred =    hundred  $\rightarrow 3 \times 200 = \underline{\hspace{1cm}}$   $\rightarrow \begin{array}{r} 200 \\ \times 3 \\ \hline \end{array}$

4.  $2 \times 4$  hundred =    hundred  $\rightarrow 2 \times 400 = \underline{\hspace{1cm}}$   $\rightarrow \begin{array}{r} 400 \\ \times 2 \\ \hline \end{array}$

5.  $5 \times 3$  hundred =    hundred  $\rightarrow 5 \times 300 = \underline{\hspace{1cm}}$   $\rightarrow \begin{array}{r} 300 \\ \times 5 \\ \hline \end{array}$

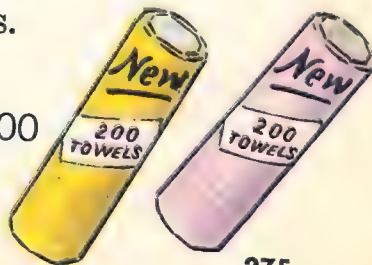
6.  $7 \times 5$  hundred =    hundred  $\rightarrow 7 \times 500 = \underline{\hspace{1cm}}$   $\rightarrow \begin{array}{r} 500 \\ \times 7 \\ \hline \end{array}$

— Copy and multiply.

a	b	c	d	e	f	g
7. $\begin{array}{r} 200 \\ \underline{4} \end{array}$	$\begin{array}{r} 100 \\ \underline{5} \end{array}$	$\begin{array}{r} 200 \\ \underline{3} \end{array}$	$\begin{array}{r} 500 \\ \underline{1} \end{array}$	$\begin{array}{r} 500 \\ \underline{3} \end{array}$	$\begin{array}{r} 200 \\ \underline{5} \end{array}$	$\begin{array}{r} 700 \\ \underline{5} \end{array}$
8. $\begin{array}{r} 300 \\ \underline{5} \end{array}$	$\begin{array}{r} 500 \\ \underline{5} \end{array}$	$\begin{array}{r} 200 \\ \underline{2} \end{array}$	$\begin{array}{r} 800 \\ \underline{5} \end{array}$	$\begin{array}{r} 400 \\ \underline{5} \end{array}$	$\begin{array}{r} 900 \\ \underline{5} \end{array}$	$\begin{array}{r} 400 \\ \underline{2} \end{array}$

9. Diana bought 3 rolls of these paper towels. She bought    towels.

10. Jim's father has 5 orchards. There are 300 trees in each orchard. He has    trees in all.





# Multiplying three-place numbers

Jack flew from Detroit to Pittsburgh and back with his father. The cities are 214 miles apart. Did Jack fly about 500 miles? about 400 miles? about 300 miles?

Can you find, without help, exactly how far Jack flew?

Find the answer by multiplying.

- Multiply the ones.  $2 \times 4 = 8$ .  
Write 8 in ones place.
- Multiply the tens.  $2 \times 1 = 2$ .  
Write 2 in tens place.
- Multiply the hundreds.  $2 \times 2 = 4$ .  
Write 4 in hundreds place. Jack traveled   ?   miles.

$$\begin{array}{r} 214 \\ \times 2 \\ \hline 428 \end{array}$$

— Copy and multiply.

*a*

$$\begin{array}{r} 1. \ 321 \\ \times 2 \\ \hline \end{array}$$

*b*

$$\begin{array}{r} 212 \\ \times 3 \\ \hline \end{array}$$

*c*

$$\begin{array}{r} 221 \\ \times 4 \\ \hline \end{array}$$

*d*

$$\begin{array}{r} 111 \\ \times 5 \\ \hline \end{array}$$

*e*

$$\begin{array}{r} 212 \\ \times 4 \\ \hline \end{array}$$

*f*

$$\begin{array}{r} 231 \\ \times 3 \\ \hline \end{array}$$

*g*

$$\begin{array}{r} 231 \\ \times 2 \\ \hline \end{array}$$

2.  $\begin{array}{r} 421 \\ \times 2 \\ \hline \end{array}$

$\begin{array}{r} 343 \\ \times 2 \\ \hline \end{array}$

$\begin{array}{r} 200 \\ \times 5 \\ \hline \end{array}$

$\begin{array}{r} 244 \\ \times 2 \\ \hline \end{array}$

$\begin{array}{r} 211 \\ \times 6 \\ \hline \end{array}$

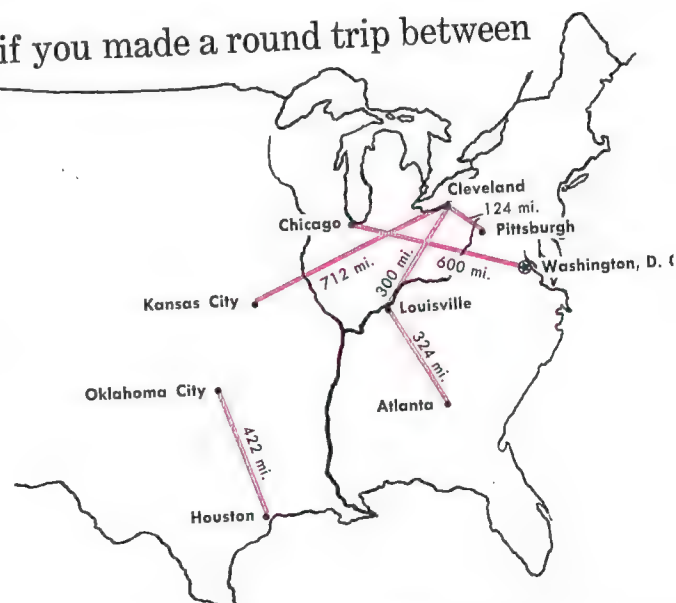
$\begin{array}{r} 211 \\ \times 5 \\ \hline \end{array}$

$\begin{array}{r} 732 \\ \times 2 \\ \hline \end{array}$

3. How far would you fly if you made a round trip between each pair of cities?

Louisville to Atlanta  
Cleveland to Louisville  
Pittsburgh to Cleveland  
Washington, D.C. to Chicago  
Houston to Oklahoma City  
Cleveland to Kansas City

324 miles  
300 miles  
124 miles  
600 miles  
422 miles  
712 miles



# Buying bicycle tires

1. Joan needs new tires for her bicycle. A tire costs \$2.12. Can you find without help how much a pair of tires will cost? Will it be about \$2.00 about \$4.00 about \$8.00?

To find the cost of 2 tires at \$2.12 each, find  $2 \times \$2.12$ .

► Multiply the pennies.  $2 \times 2$  pennies = 4 pennies.

Write the 4 in pennies place.

► Multiply the dimes.  $2 \times 1$  dime = 2 dimes.

Write the 2 in dimes column.

► Multiply the dollars.  $2 \times 2$  dollars = 4 dollars.

Where do you write the 4? Write the dollar sign and cents point. Two tires will cost     .

$$\begin{array}{r} \$2.12 \\ \times 2 \\ \hline \$4.24 \end{array}$$

— Copy and multiply.

a	b	c	d	e	f
2. \$1.23 <u>    2    </u>	\$4.32 <u>    2    </u>	\$3.24 <u>    2    </u>	\$1.34 <u>    2    </u>	\$2.11 <u>    2    </u>	\$4.33 <u>    2    </u>
3. \$3.44 <u>    2    </u>	\$2.12 <u>    4    </u>	\$2.00 <u>    3    </u>	\$2.00 <u>    5    </u>	\$7.42 <u>    2    </u>	\$6.12 <u>    2    </u>

4. Find the cost of 2 tires at \$2.24 each; at \$3.32 each; at \$4.00 each.

5. Lenny wants a reflector for the front and back of his bicycle. One reflector costs \$.42. Two reflectors will cost     .

6. Bicycle lights cost \$1.24 each. Find the cost of two of these lights.

*Practice for excellence.* Do Practice Set 43, page 325.

# Zeros in multiplication

Joe needs to find  $2 \times 203$ . Will his answer be about 400? about 500? Can you find the exact answer without help?

Here are two ways to find  $2 \times 203$ .

**1** Think:  $2 \times 200 = 400$ ;  $2 \times 3 = 6$ ; so  $2 \times 203$  is  $400 + 6 = 406$ .

**2** Multiply 203 by 2 this way.

- ▶ Multiply the ones.  $2 \times 3 = 6$ . Write 6 in ones place.
- ▶ Multiply the tens.  $2 \times 0 = 0$ . Write 0 in tens place.
- ▶ Multiply the hundreds.  $2 \times 2 = 4$ . Write 4 in hundreds place.

$$\begin{array}{r} 203 \\ \times 2 \\ \hline 406 \end{array}$$

— Do these multiplications. Use way **1**, then way **2**.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} 403 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 303 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 401 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 204 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$3.02 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$1.04 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$2.02 \\ \times 4 \\ \hline \end{array}$
2. $\begin{array}{r} 602 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 501 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 701 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 603 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$8.01 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$6.00 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$3.01 \\ \times 5 \\ \hline \end{array}$
3. $\begin{array}{r} 420 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 320 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 640 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 303 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$2.30 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$1.10 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$3.30 \\ \times 2 \\ \hline \end{array}$
4. $\begin{array}{r} 210 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 810 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 410 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 701 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$1.20 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$5.20 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$5.10 \\ \times 3 \\ \hline \end{array}$

5. Is  $6 \times 98$  a little less than 600? How can you tell?

6. Are there nearly 100 fives in 494? How can you tell?

*Practice for excellence.* Do Practice Set 44, page 325.



# Estimating answers

1. Karen found the cost of 4 books at 51¢ each. →

Estimate the answer. Think: 51¢ is about 50¢. 2 books at 50¢ each would cost \$1.00; so 4 books would cost \$2.00. The answer should be about \$2.00.

**WRONG!**

$$\begin{array}{r} \$51 \\ \times 4 \\ \hline \$204 \end{array}$$

What is wrong with Karen's work? Check it. How would estimating have helped her?

2. Judy found the cost of a 98-cent game, a 2-dollar book, and a 49-cent puzzle. →

Estimate the answer. Think: 98¢ is about \$1.00. \$1.00 and \$2.00 and \$.49 are \$3.49.

**WRONG!**

$$\begin{array}{r} \$ .98 \\ 2.00 \\ .49 \\ \hline \$2.47 \end{array}$$

What mistake did Judy make in her addition? How would estimating have helped her?

3. Joe has \$1.00. Sue has \$.38. Joe subtracted to find how much more he has than Sue. →

Estimate the answer. Think: \$.38 is about \$.40. \$.40 from \$1.00 is \$.60. The answer should be about \$.60.

**WRONG!**

$$\begin{array}{r} \$1.00 \\ - .38 \\ \hline \$ .72 \end{array}$$

What is wrong with Joe's subtraction? How would estimating have helped him?

Think twice!

4. David found  $\frac{1}{2}$  of 608. →

Estimate the answer. Think:  $\frac{1}{2}$  of 600 is 300. The answer should be about 300.

What is wrong with David's work?

**WRONG!**

$$\begin{array}{r} 34 \\ 2 \overline{)608} \end{array}$$

## Estimating answers

After each problem on this page there are three answers. None of the answers is exact, but one is more sensible than the others.

Estimate to find which answer is most sensible and tell why you think so. Then work each problem to find the exact answer.

1. Dotty would like to give each of 4 friends a bar of pink soap. The soap costs 19¢ a bar.

Will 4 bars cost about \$.50, \$.80, or \$2.00?

2. Eric wants a raincoat that costs \$5.98 and a pair of rubbers that costs \$1.50.

Will both of them cost about \$6.00, \$7.00, or \$7.50?

3. Andy and Billy found 162 nuts. They divided them equally. Did each get about 80 nuts, 60 nuts, or 90 nuts?

4. Becky has \$9.96. If she buys a doll carriage for \$7.98, will she have left about \$3.00, \$2.00, or \$1.00?

5. Susan's father gave her 84¢ and sent her to the post office for 4-cent stamps.

Can she get about 40, 30, or 20 stamps?

6. If you buy a 49-cent ball and give the clerk a dollar, will your change be about 40¢, 60¢, or 50¢?

7. If you buy a 28-cent game and give the clerk a half dollar, will your change be about 20¢, 30¢, or 40¢?

8. If you spend 68¢ and give the clerk a dollar, will your change be about 40¢, 20¢, or 30¢?

9. If one yard of ribbon costs \$.22, will 5 yards cost about \$2.00, \$1.00, or \$1.50?

# Changing in multiplication



1. Estimate to find the cost of two bicycle carry bags at \$1.49 each. Now find the exact cost.

- Multiply the pennies.  $2 \times 9 = 18$ .
- *Change the 18 pennies to 1 dime 8 pennies.*  
Write the 8 in pennies column. (Don't forget the 1 dime.)
- Multiply the dimes.  $2 \times 4 = 8$ . 8 dimes plus 1 dime is 9 dimes. Where do you write the 9?  
Tell how to finish the multiplication.  
Two carry bags will cost   .

$$\begin{array}{r} \$1.49 \\ \times 2 \\ \hline \$2.98 \end{array}$$

— Copy and multiply.

a	b	c	d	e	f	g
2. $\begin{array}{r} \$1.12 \\ \underline{\phantom{00}5} \end{array}$	$\begin{array}{r} \$3.48 \\ \underline{\phantom{00}2} \end{array}$	$\begin{array}{r} \$2.37 \\ \underline{\phantom{00}2} \end{array}$	$\begin{array}{r} \$1.45 \\ \underline{\phantom{00}2} \end{array}$	$\begin{array}{r} \$2.16 \\ \underline{\phantom{00}2} \end{array}$	$\begin{array}{r} \$4.19 \\ \underline{\phantom{00}2} \end{array}$	$\begin{array}{r} \$3.18 \\ \underline{\phantom{00}5} \end{array}$
3. $\begin{array}{r} 215 \\ \underline{\phantom{00}3} \end{array}$	$\begin{array}{r} 115 \\ \underline{\phantom{00}4} \end{array}$	$\begin{array}{r} 112 \\ \underline{\phantom{00}8} \end{array}$	$\begin{array}{r} 114 \\ \underline{\phantom{00}5} \end{array}$	$\begin{array}{r} 113 \\ \underline{\phantom{00}5} \end{array}$	$\begin{array}{r} 439 \\ \underline{\phantom{00}2} \end{array}$	$\begin{array}{r} 115 \\ \underline{\phantom{00}5} \end{array}$

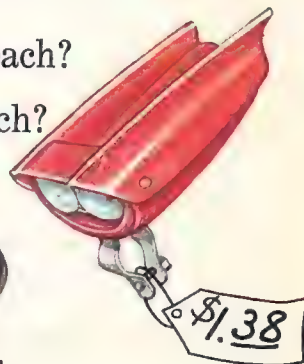
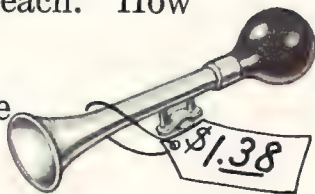
4. Find the cost of a pair of bicycle pedals at \$2.15 each; at \$2.35 each.

5. How much will two coaster brakes cost at \$4.25 each?

6. How much will 2 bicycle baskets cost at \$1.37 each?

7. Both Fred and Don need new chains for their bicycles. The chains cost \$1.29 each. How much will two chains cost?

8. How much will both the bicycle headlight and horn cost?



*Practice for excellence.* Do Practice Set 45, page 325.

## More changing in multiplication

1. Find the cost of two sports shirts at \$3.92 each.  
Multiply \$3.92 by 2 like this.

- ▶ Multiply the pennies.  $2 \times 2 = 4$ .  
Write the 4 in pennies place.
- ▶ Multiply the dimes.  $2 \times 9 = 18$ .
- ▶ *Change the 18 dimes to 1 dollar 8 dimes.*  
Write the 8 in dimes column. (Don't forget the 1 dollar.)
- ▶ Multiply the dollars.  $2 \times 3 = 6$ .  
6 dollars plus the 1 dollar is ? dollars. Where do you write the 7?  
Two sports shirts cost ?.

$$\begin{array}{r} \$3.92 \\ \times 2 \\ \hline \$7.84 \end{array}$$

2.  $\begin{array}{r} \$1.64 \\ \times 2 \\ \hline \end{array}$      $\begin{array}{r} \$4.73 \\ \times 2 \\ \hline \end{array}$      $\begin{array}{r} \$1.51 \\ \times 5 \\ \hline \end{array}$      $\begin{array}{r} \$3.82 \\ \times 2 \\ \hline \end{array}$      $\begin{array}{r} \$2.91 \\ \times 2 \\ \hline \end{array}$      $\begin{array}{r} \$4.41 \\ \times 5 \\ \hline \end{array}$

3. To find the cost of 2 pairs of jeans at \$4.69 each, you multiply \$4.69 by 2.

- ▶ Multiply the pennies.  $2 \times 9 = 18$ .
- ▶ *Change the 18 pennies to 1 dime 8 pennies.*  
Where do you write the 8?
- ▶ Multiply the dimes.  $2 \times 6 = 12$ . 12 dimes plus the 1 dime is ? dimes.
- ▶ *Change the 13 dimes to 1 dollar 3 dimes.*  
Where do you write the 3?
- ▶ Multiply the dollars.  $2 \times 4 = 8$ . 8 dollars plus the 1 dollar is ? dollars.  
Two pairs of jeans cost ?.

$$\begin{array}{r} \$4.69 \\ \times 2 \\ \hline \$9.38 \end{array}$$

4.  $\begin{array}{r} \$5.25 \\ \times 4 \\ \hline \end{array}$      $\begin{array}{r} \$5.25 \\ \times 5 \\ \hline \end{array}$      $\begin{array}{r} \$2.15 \\ \times 7 \\ \hline \end{array}$      $\begin{array}{r} \$2.52 \\ \times 6 \\ \hline \end{array}$      $\begin{array}{r} \$1.22 \\ \times 8 \\ \hline \end{array}$      $\begin{array}{r} \$3.53 \\ \times 5 \\ \hline \end{array}$



# Practice in multiplying

— Copy and multiply.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} \$2.65 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$1.67 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$3.98 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$1.87 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$1.55 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$1.55 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} \$1.34 \\ \times 5 \\ \hline \end{array}$
2. $\begin{array}{r} \$2.55 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} \$9.15 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$1.52 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$2.57 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$5.25 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} \$2.55 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$3.98 \\ \times 2 \\ \hline \end{array}$
3. $\begin{array}{r} 254 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 255 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 552 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 562 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 526 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 522 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 125 \\ \times 8 \\ \hline \end{array}$
4. $\begin{array}{r} 528 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 251 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 524 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 559 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 515 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 527 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 789 \\ \times 5 \\ \hline \end{array}$

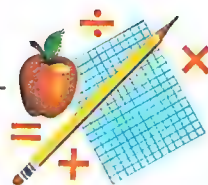
— Work each problem below. Then check your answer by estimating to see if it is sensible.

- Find the cost of 8 dolls at \$2.25 each.
- What will the nine baseball suits for a boys' baseball team cost if one suit costs \$5.22?
- It costs \$2.55 to rent a boat for a day. At that rate, how much will it cost to rent a boat for a week?
- Both Betsy and Jack want tennis rackets that cost \$3.85 each. How much will two rackets cost?
- Find the cost of a half-dozen hats at \$2.15 each.
- If Mr. King buys each of his 3 boys a sweater for \$5.45, how much will the 3 sweaters cost?



*Practice for excellence.* Do Practice Set 46, page 326.

# SELF-HELP TEST 11



— Add and check.

1. \$.29

.64

.70

.85 [106]

2. 629

485 [163-164]

3. 175

309

46

862 [226]

4. \$5.05

7.96

.89

3.40 [267]

— Subtract and check.

5. 43

29 [111-112]

6. 952

898 [243]

7. \$8.37

5.89 [243]

8. \$9.00

2.62 [247-248]

— Multiply.

9. 22

4 [261]

10. 51

9 [263]

11. 52

8 [264-265]

12. \$.40

5 [262]

13. 601

5 [278]

14. 205

6 [281]

15. \$4.19

2 [281]

16. \$3.92

2 [282]

# SELF-HELP TEST 12



— Divide.

1.  $2\overline{)48}$  [271]

2.  $2\overline{)186}$  [272]

3.  $2\overline{)87}$  [274]

4.  $5\overline{)\$3.50}$  [273]

5. What will be the date a year from today? [140]

6. How many lollipops are 6 dozen lollipops? [264-265]

7. Write the sum of  $4000 + 60 + 3$ . [253]

8. A set of 6 books cost \$11.98. Do you estimate the cost of one book to be about \$1.00, or \$1.50, or \$2.00? [208-209]

# IT'S CHECK-UP TIME



1. 
$$\begin{array}{r} 21 \\ \times 8 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} \$ .25 \\ \times 9 \\ \hline \end{array}$$

3. 
$$\overline{2)86}$$

4. 
$$\overline{5)350}$$

5. Find the cost of 8 games at \$1.10 each.

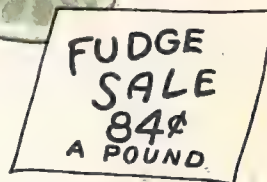
6. Find the cost of  $\frac{1}{2}$  pound of fudge.

7. Tom got a set of 5 paint brushes for \$3.50.  
The brushes cost    apiece.

8. Do you estimate the cost of 7 books at \$1.98 each to be about \$7.00, \$10.00, or \$14.00?

9. Do you estimate that  $\frac{1}{2}$  of 98 is about 20, 30, or 50?

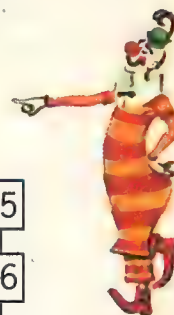
10. How many 2-cent plants can you buy for 45¢?  
Will there be any money left? How much?



If you have time, try these -

11.  $6 \times 154 = 924$ , so  $924 \div 6 = \underline{\quad}$ .

12. Find the cost of 3 lunch boxes at \$1.59 each.

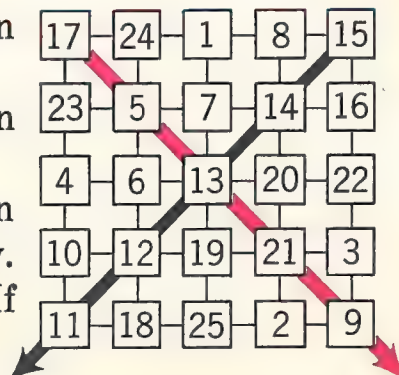


Find the sum of the numbers in each row of this square.

Find the sum of the numbers in each column.

Find the sum of the numbers on the red arrow; on the black arrow.

Are all your sums the same? If so, this is a magic square.



## Getting ready to multiply and divide with threes



Ann said the paper dolls above show her these facts:

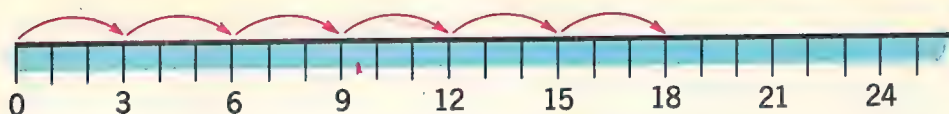
1.  $6 + 6 + 6 = 18$
2. 3 sixes are 18
3. 6 threes are 18
4.  $3 + 3 + 3 + 3 + 3 + 3 = 18$
5. In 18 there are 3 sixes.
6. In 18 there are 6 threes.

Make a list of the facts each of the other pictures teaches.

7. Write an addition to show that there are 3 sevens in 21.  
Write an addition to show 7 threes in 21.
8. If you know that 3 fives are 15, you also know that   ?   threes are 15.
9. Draw a picture to show that 4 threes are twice as many as 2 threes.
10. Are 8 threes twice as many as 4 threes?



# Seeing threes on a number line



1. Dick used this number line to find  $6 \times 3$ .

He put his red pencil at zero and drew a line over 3 spaces; then over another 3 spaces, and so on until he had drawn 6 lines. Dick's number line shows that 6 threes are   ?  .

2. Use Dick's number line to find:

$$2 \times 3 \quad 3 \times 3 \quad 4 \times 3 \quad 5 \times 3 \quad 7 \times 3 \quad 8 \times 3$$

3. Write an addition to show that 6 threes are 18.

4. Tom said, "I multiply to find 6 threes, that's the shortest way.  $6 \times 3 = 18$ ." Is Tom right?  $\longrightarrow$

$\begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array}$
---



5. Joe said, "I can use a number line to show division. Here is how I find how many threes are in 24."

Joe put his red pencil on 24 and drew a line over 3 spaces to 21; then over another 3 spaces, and so on, until he came to zero. His lines show there are   ?   threes in 24.

6. Use Joe's number line to find:

$$9 \div 3 \quad 12 \div 3 \quad 15 \div 3 \quad 18 \div 3 \quad 21 \div 3 \quad 27 \div 3$$

7. Begin with 24. Subtract 3 over and over again as many times as you can. How many threes can you subtract? This shows that there are   ?   threes in 24.

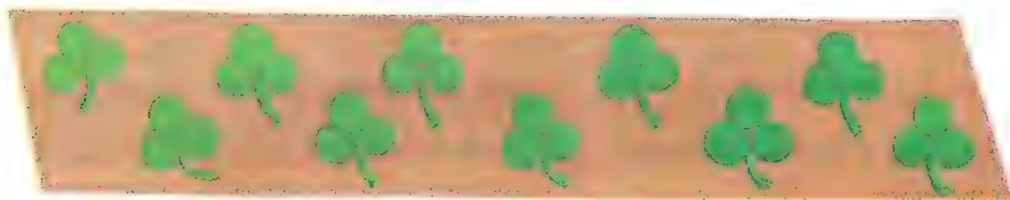
8. Pete said, "The shortest way to find how many threes are in 24 is to divide." Is he right?  $\longrightarrow$

$\begin{array}{r} 8 \\ 3 \overline{)24} \end{array}$
--

9. Count by 3's to 30. Count backward by 3's from 30 to zero.

# Multiplication facts of threes

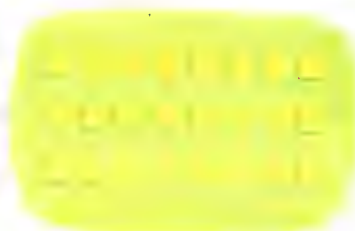
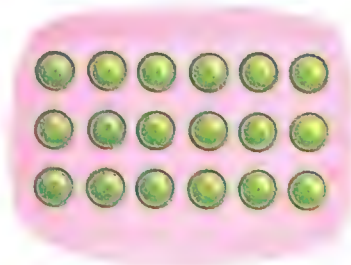
1. Debbie cut out green circles to make clover leaves. How many circles did she use for 1 leaf? for 2? 3? 4? 5? 6? 7? 8? 9? 10?



— Use the picture above to find the answers to these examples.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
2. $1 \times 3$	$3 \times 3$	$5 \times 3$	$7 \times 3$	$9 \times 3$
3. $2 \times 3$	$4 \times 3$	$6 \times 3$	$8 \times 3$	$10 \times 3$

4. Tell two multiplication facts that each picture shows.



5.  $8 + 8 + 8 = 24$  shows that 3 eights are   ?  .
6. Write an addition which shows that  $4 \times 3 = 12$ . Write an addition which shows that  $3 \times 4 = 12$ .

# Multiplication facts of threes

1. Read the multiplication facts of threes. Say, "One times 3 is 3; 2 times 3 is 6"; and so on.

## Multiplication Facts of Threes

$\begin{array}{r} 3 \\ \times 1 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$	$\begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array}$	$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$	$\begin{array}{r} 3 \\ \times 8 \\ \hline 24 \end{array}$	$\begin{array}{r} 3 \\ \times 9 \\ \hline 27 \end{array}$
$\begin{array}{r} 1 \\ \times 3 \\ \hline 3 \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$	$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array}$	$\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$	$\begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array}$	$\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$

2. Practice these multiplication facts of threes until you can give every answer correctly:

$\begin{array}{r} 3 \\ \times 8 \end{array}$	$\begin{array}{r} 5 \\ \times 3 \end{array}$	$\begin{array}{r} 3 \\ \times 2 \end{array}$	$\begin{array}{r} 3 \\ \times 6 \end{array}$	$\begin{array}{r} 0 \\ \times 3 \end{array}$	$\begin{array}{r} 3 \\ \times 9 \end{array}$	$\begin{array}{r} 3 \\ \times 3 \end{array}$	$\begin{array}{r} 4 \\ \times 3 \end{array}$	$\begin{array}{r} 7 \\ \times 3 \end{array}$
$\begin{array}{r} 2 \\ \times 3 \end{array}$	$\begin{array}{r} 3 \\ \times 5 \end{array}$	$\begin{array}{r} 1 \\ \times 3 \end{array}$	$\begin{array}{r} 8 \\ \times 3 \end{array}$	$\begin{array}{r} 6 \\ \times 3 \end{array}$	$\begin{array}{r} 3 \\ \times 4 \end{array}$	$\begin{array}{r} 9 \\ \times 3 \end{array}$	$\begin{array}{r} 3 \\ \times 0 \end{array}$	$\begin{array}{r} 3 \\ \times 7 \end{array}$

3. Copy Exercise 2 and write the answers. Make and study Help-Yourself Cards for each fact you do not know. Practice until you are sure of every answer.

$$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$$

4. Say each answer in Exercise 2. Then, after you say the answer, add 1 to it. Begin: " $8 \times 3 = 24$ ;  $24 + 1 = 25$ ."

5. At 3¢ each, find the cost of 2 paper hats; 5; 6; 9; 3.

6. Copy and complete these tables.

Go up to  $10 \times 3$  and to  $3 \times 10$ .

$0 \times 3 = 0$	$3 \times 0 = 0$
$1 \times 3 = 3$	$3 \times 1 = 3$
$2 \times 3 = 6$	$3 \times 2 = 6$

KNOW YOUR FACTS Do Exercise 4, page 191, and Exercise 3, page 218.

## Using threes in multiplication

— Multiply. Estimate each answer to see if it is sensible.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 23 \\ \underline{3} \end{array}$	$\begin{array}{r} 30 \\ \underline{3} \end{array}$	$\begin{array}{r} 71 \\ \underline{3} \end{array}$	$\begin{array}{r} 52 \\ \underline{3} \end{array}$	$\begin{array}{r} 43 \\ \underline{3} \end{array}$	$\begin{array}{r} 90 \\ \underline{3} \end{array}$	$\begin{array}{r} 62 \\ \underline{3} \end{array}$
2.	$\begin{array}{r} 15 \\ \underline{3} \end{array}$	$\begin{array}{r} 26 \\ \underline{3} \end{array}$	$\begin{array}{r} 53 \\ \underline{4} \end{array}$	$\begin{array}{r} 23 \\ \underline{6} \end{array}$	$\begin{array}{r} 13 \\ \underline{7} \end{array}$	$\begin{array}{r} 23 \\ \underline{8} \end{array}$	$\begin{array}{r} 34 \\ \underline{3} \end{array}$
3.	$\begin{array}{r} 800 \\ \underline{3} \end{array}$	$\begin{array}{r} 500 \\ \underline{3} \end{array}$	$\begin{array}{r} 300 \\ \underline{9} \end{array}$	$\begin{array}{r} 300 \\ \underline{4} \end{array}$	$\begin{array}{r} 700 \\ \underline{3} \end{array}$	$\begin{array}{r} 300 \\ \underline{3} \end{array}$	$\begin{array}{r} 600 \\ \underline{3} \end{array}$
4.	$\begin{array}{r} 612 \\ \underline{3} \end{array}$	$\begin{array}{r} 820 \\ \underline{3} \end{array}$	$\begin{array}{r} 701 \\ \underline{3} \end{array}$	$\begin{array}{r} 423 \\ \underline{5} \end{array}$	$\begin{array}{r} 812 \\ \underline{3} \end{array}$	$\begin{array}{r} 923 \\ \underline{5} \end{array}$	$\begin{array}{r} 513 \\ \underline{3} \end{array}$
5.	$\begin{array}{r} \$1.23 \\ \underline{5} \end{array}$	$\begin{array}{r} \$4.21 \\ \underline{3} \end{array}$	$\begin{array}{r} \$5.12 \\ \underline{3} \end{array}$	$\begin{array}{r} \$3.01 \\ \underline{6} \end{array}$	$\begin{array}{r} \$3.10 \\ \underline{5} \end{array}$	$\begin{array}{r} \$4.31 \\ \underline{5} \end{array}$	$\begin{array}{r} \$7.21 \\ \underline{3} \end{array}$

6. If a quart of frozen custard serves 8 persons, how many persons can be served from 3 quarts?

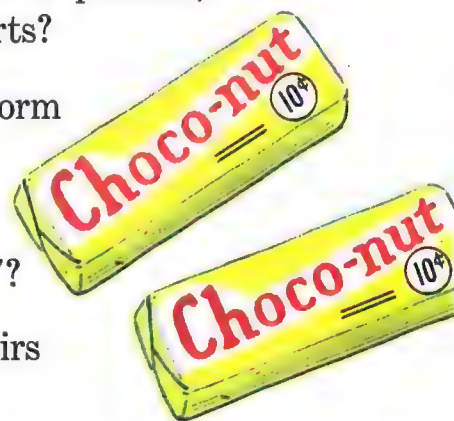
7. How many children are needed to form 3 teams with 9 children on a team?

8. How many of these candy bars can you get for 3 dimes? 6? 9? 8? 7?

9. Use addition to find the cost of 3 pairs of shorts at \$2.30 a pair.

10. Now use multiplication to find the answer to Exercise 9. Do you get the same answer you got by adding?

Think twice! At \$2.35 a pair, find the cost of 3 pairs of beach slippers; of 4 pairs; 5 pairs; 6; 7; 8; 9.





# Division facts of threes

1. Sue has 18¢. Without help, find how many 3-cent paper flags she can buy.

Here are 18 dots to show the 18¢. Sue is drawing a line around each group of 3 dots. When she has finished, the drawing will show that you can divide 18 pennies into   ?   groups of 3 pennies. There are   ?   3's in 18.



Sue can get   ?   3-cent paper flags for 18¢.

2.  $3 + 3 + 3 + 3 + 3 + 3 = 18$  shows that there are   ?   3's in 18.

3.  $8 \times 3 = 24$ , so  $24 \div 3 = \underline{\quad ? \quad}$ . 6.  $7 \times 3 = 21$ , so  $21 \div 3 = \underline{\quad ? \quad}$ .

4.  $6 \times 3 = 18$ , so  $18 \div 3 = \underline{\quad ? \quad}$ . 7.  $5 \times 3 = 15$ , so  $15 \div 3 = \underline{\quad ? \quad}$ .

5.  $9 \times 3 = 27$ , so  $27 \div 3 = \underline{\quad ? \quad}$ . 8.  $4 \times 3 = 12$ , so  $12 \div 3 = \underline{\quad ? \quad}$ .

— What number does N stand for in each of these examples?

9. <sup>a</sup>  $N \times 3 = 15$     <sup>b</sup>  $3 \times N = 12$     <sup>c</sup>  $3 \times N = 18$     <sup>d</sup>  $N \times 3 = 6$

10.  $3 \times N = 24$      $N \times 3 = 21$      $N \times 3 = 27$      $3 \times N = 9$

This dot picture shows 4 facts. What are they?

$\begin{array}{cccccc} \bullet & \bullet & \bullet & \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet & \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet & \bullet & \bullet & \bullet \end{array}$ 
 $7 \times 3 = \underline{\quad ? \quad}$      $21 \div 7 = \underline{\quad ? \quad}$   
 $3 \times 7 = \underline{\quad ? \quad}$      $21 \div 3 = \underline{\quad ? \quad}$

On a squared paper, make dot pictures to show 4 facts in each of these families. Write the facts.

8, 3, 24

6, 3, 18

9, 3, 27

## Division facts of threes

1. Read the division facts below like this: "Three divided by 3 is 1; six divided by 3 is 2"; and so on.
2. Now read the facts this way: "How many threes in 3? One. How many threes in 6? Two."

### Division Facts of Threes

$\begin{array}{r} 1 \\ 3 \overline{)3} \end{array}$	$\begin{array}{r} 2 \\ 3 \overline{)6} \end{array}$	$\begin{array}{r} 3 \\ 3 \overline{)9} \end{array}$	$\begin{array}{r} 4 \\ 3 \overline{)12} \end{array}$	$\begin{array}{r} 5 \\ 3 \overline{)15} \end{array}$	$\begin{array}{r} 6 \\ 3 \overline{)18} \end{array}$	$\begin{array}{r} 7 \\ 3 \overline{)21} \end{array}$	$\begin{array}{r} 8 \\ 3 \overline{)24} \end{array}$	$\begin{array}{r} 9 \\ 3 \overline{)27} \end{array}$
$\begin{array}{r} 3 \\ 1 \overline{)3} \end{array}$	$\begin{array}{r} 3 \\ 2 \overline{)6} \end{array}$	$\begin{array}{r} 3 \\ 3 \overline{)9} \end{array}$	$\begin{array}{r} 3 \\ 4 \overline{)12} \end{array}$	$\begin{array}{r} 3 \\ 5 \overline{)15} \end{array}$	$\begin{array}{r} 3 \\ 6 \overline{)18} \end{array}$	$\begin{array}{r} 3 \\ 7 \overline{)21} \end{array}$	$\begin{array}{r} 3 \\ 8 \overline{)24} \end{array}$	$\begin{array}{r} 3 \\ 9 \overline{)27} \end{array}$

3. Say the answers.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
$3 \overline{)3}$	$5 \overline{)15}$	$3 \overline{)6}$	$3 \overline{)21}$	$3 \overline{)9}$	$7 \overline{)21}$	$3 \overline{)12}$	$3 \overline{)27}$	$4 \overline{)12}$
$1 \overline{)3}$	$3 \overline{)18}$	$8 \overline{)24}$	$3 \overline{)0}$	$3 \overline{)24}$	$9 \overline{)27}$	$2 \overline{)6}$	$6 \overline{)18}$	$3 \overline{)15}$

4. Copy the examples in Exercise 3 and write the answers. Make and study Help-Yourself Cards for the facts you do not know.

5. Roy uses 3 buttons for wheels on a model plane. He has 12 buttons. He has wheels for   ?   planes.

Think: He uses 3 buttons on 1 plane, so he can make as many planes as there are 3's in 12.  $12 \div 3 = \underline{\quad}$

6. How many yards are there in 3 ft.? in 6 ft.? in 9 ft.? in 24 ft.? 12 ft.? 27 ft.? 15 ft.? 18 ft.?

KNOW YOUR FACTS Do Exercise 6, page 197, and Exercise 3, page 225.



# Finding one third of a number

Nan wants to share 24 cookies equally with Jane and Jerry.

She said, "If I had an apple to share equally among the three of us, I'd cut it into 3 equal parts. I'd cut it into thirds."

"I can't cut a plate of cookies into three equal pieces, but I can divide the cookies into three equal piles."



1. Count out 24 cookies into three equal piles. How many cookies are in each pile?  $\frac{1}{3}$  of 24 =   ?  ;  $24 \div 3 = \underline{\quad}$ .

2. Deal out 21 cards to 3 players. How many cards does each player get?  $\frac{1}{3}$  of 21 =   ?  ;  $21 \div 3 = \underline{\quad}$ .

3. Deal out 18 cards to 3 players. Each player gets   ?   cards.  $\frac{1}{3}$  of 18 =   ?  ;  $18 \div 3 = \underline{\quad}$ .

■ To find  $\frac{1}{3}$  of a number, divide the number by 3.

4. Find  $\frac{1}{3}$  of 6¢; of 15¢; of 12¢; of 18¢; of 27¢; 24¢.

5. Find  $\frac{1}{3}$  of 27; of 18; of 9; 21; 12; 3; 24; 15.

6. Three girls share 18 paper dolls equally. How many paper dolls does each girl get?

7. Three boys share 24 trading cards equally. How many cards does each boy get?

8. If 2 boys share 18 cents equally, each boy will get   ?   ¢.  
If 3 boys share 18¢ equally, each boy will get only   ?   ¢.



## Oral problems

— For each problem below, first tell your answer, then tell how you got your answer.

1. Tom needs 18 bells for a clown suit. The bells are sold 6 on a card. How many cards should he buy?
2. Jeff paid 45¢ for a set of 5 colored pencils. What was the price of each pencil?
3. There are 13 stripes in the flag of the United States. What colors are they? Without looking at a flag, tell whether there is an equal number of red and white stripes.
4. How many cookies will each child get if 3 children share a dozen cookies? if 2 children share them?
5. How many feet are there in a yard? in 2 yards? in 4 yards? in 7 yards? Use a yardstick to prove your answer.
6. How many yards are there in 24 ft.? in 27 ft.? 36 ft.?
7. The 20 children in Miss Smith's class wanted to divide into 3 equal teams for a game.  
Pete said, "We can't do it."  
Joe said, "We can if 2 of us don't play."  
Ann said, "We can if Miss Smith plays too."  
Do you agree with Pete? with Joe? with Ann? Explain your answer.
8. How many quart bottles can you fill with 2 gallons of water? 3 gallons?
9. Sally has two dozen eggs to color. She wants to make an equal number of red, purple, and yellow eggs. How many of each can she make?



# Remainders in division

TRY IT

- Show how many piles of 3 pennies each you can make with 6 pennies; 9 pennies; 10; 11; 12; 13; 14; 15.
- Tell how many pennies you will have left over each time.

1. Look at these circles and say, "How many 3's in 6? Two. How many 3's in 7? Two and 1 left over"; and so on.  $\longrightarrow$

2. Name all of the numbers from 3 to 30 that, when divided by 3, have no remainder.

3. Name all of the numbers from 3 to 30 that, when divided by 3, have a remainder.

4. Tell the Dividing-by-Three Helping Numbers.

5. What Helping Number would you use in finding how many 3's are in each of these numbers:

13	8	19	4	14	5	11	23	20
7	28	26	10	22	16	29	25	17



6. Divide each number in Exercise 5 by 3. Say your answers. Tell what subtraction you do to find the remainders. Then write your division like this to show your thinking:  $\longrightarrow$

$$\begin{array}{r} 4 \text{ r} 1 \\ 3 \overline{) 13} \\ - 12 \\ \hline 1 \end{array}$$

7. At 3¢ each, how many sheets of drawing paper can you buy for 5¢? 10¢? 25¢? How many cents will you have left each time?

8. Jenny has 20 marshmallows. She can make   ?   candy men like this and have   ?   marshmallows left over.



## Oral practice

1. Multiply 5 by each of the numbers below. Then multiply 2 by each number below; then 3; then 1.

8    5    9    2    7    6    4    3    1

2. Divide each of the numbers below by 2; by 3; by 5.

9    12    16    11    14    19    13    10    15

3. Add 7 to each of the numbers below; add 8; add 9.

34    56    12    78    23    19    45    67    21

4. Subtract 6 from each of the numbers below; subtract 5; subtract 4.

22    53    19    31    75    40    64    23    41

5. If 1 bench will seat 3 persons, how many persons can sit on 7 benches? 8 benches? 6? 9? 5?

6. Tom had 35 bricks to carry to the barn for his father. He carried 7 bricks at a time.

How many trips did Tom have to make?

7. Carl can get 2 fishhooks for a cent. How many can he get for 2¢? for 4¢? 5¢? 7¢? 8¢? 9¢?

8. When you count by 10's, all the numbers end in   ?  .

9. When you count by 5's, all the numbers end in   ?   or   ?  .

Think twice!

10. Do you think  $2 \times 297$  is about 400 or 600? Why?

11.  $7 \times 48 = 336$ ; so  $336 \div 7 = \underline{\quad ? \quad}$ ;  $336 \div 48 = \underline{\quad ? \quad}$ ; and  $48 \times 7 = \underline{\quad ? \quad}$ .

12.  $50 \times 12 = 600$ ; so  $50 \times 24 = \underline{\quad ? \quad}$ ;  $50 \times 6 = \underline{\quad ? \quad}$ .

13. Jane looked at this division:  $696 \div 7$ . She said the answer will be less than 100. How could she tell that?

# Using fours in multiplication

1. Which of these multiplications have you learned? Which do you still need to learn? —→

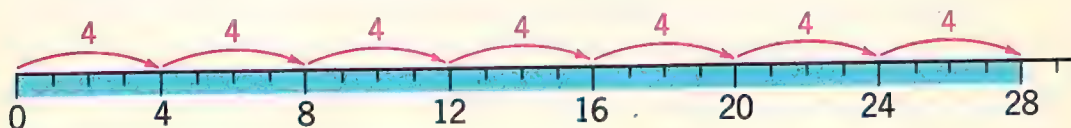
2. Copy and complete this multiplication table of fours. Below are some hints that will help you find the missing numbers for the table.

- $2 \times 4 = 8$ , so  $4 \times 4 = 2 \times 8$ , or  $\underline{\quad}$ .
- $3 \times 4 = 12$ , so  $6 \times 4 = 2 \times 12$ , or  $\underline{\quad}$ .
- $4 \times 4 = 16$ , so  $8 \times 4 = 2 \times 16$ , or  $\underline{\quad}$ .
- $6 \times 4 = 24$ , so  $7 \times 4 = 24 + 4$ , or  $\underline{\quad}$ .
- $10 \times 4 = 40$ , so  $9 \times 4 = 40 - 4$ , or  $\underline{\quad}$ .

$0 \times 4 = \underline{\quad}$
$1 \times 4 = \underline{\quad}$
$2 \times 4 = \underline{\quad}$
$3 \times 4 = \underline{\quad}$
$4 \times 4 = \underline{\quad}$
$5 \times 4 = \underline{\quad}$
$6 \times 4 = \underline{\quad}$
$7 \times 4 = \underline{\quad}$
$8 \times 4 = \underline{\quad}$
$9 \times 4 = \underline{\quad}$
$10 \times 4 = \underline{\quad}$

3. The red lines on the number line below show that:

$$2 \times 4 = \underline{\quad} \quad 4 \times 4 = \underline{\quad} \quad 6 \times 4 = \underline{\quad} \quad 7 \times 4 = \underline{\quad}$$



4. Find the answers.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
4	4	4	4	4	4	4	4	4
$\times 2$	$\times 3$	$\times 5$	$\times 9$	$\times 4$	$\times 7$	$\times 8$	$\times 6$	$\times 1$

5. Show by addition that:

$$4 \times 4 = 16 \quad 6 \times 4 = 24 \quad 7 \times 4 = 28 \quad 9 \times 4 = 36$$

- On squared paper, draw dot pictures to show these multiplication-division fact families:

$$6, 4, 24 \quad 7, 4, 28 \quad 8, 4, 32 \quad 9, 4, 36$$

- Write the 4 facts each picture shows.

# Multiplication facts of fours

1. Read these multiplication facts of fours.

Multiplication Facts of Fours								
$\begin{array}{r} 4 \\ \times 1 \\ \hline 4 \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$	$\begin{array}{r} 4 \\ \times 6 \\ \hline 24 \end{array}$	$\begin{array}{r} 4 \\ \times 7 \\ \hline 28 \end{array}$	$\begin{array}{r} 4 \\ \times 8 \\ \hline 32 \end{array}$	$\begin{array}{r} 4 \\ \times 9 \\ \hline 36 \end{array}$
$\begin{array}{r} 1 \\ \times 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline 20 \end{array}$	$\begin{array}{r} 6 \\ \times 4 \\ \hline 24 \end{array}$	$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$	$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$	$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$

2. Practice these multiplication facts of fours until you can give each answer correctly.

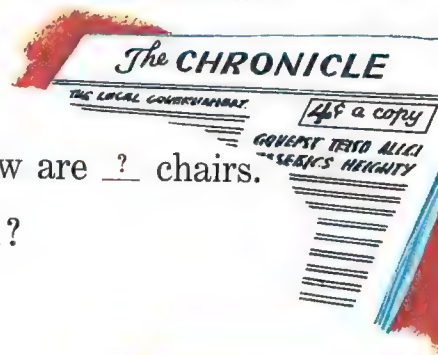
$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$

3. Copy Exercise 2, and write the answers. Make and study Help-Yourself Cards for the facts you do not know.

4. Find the cost of 2 newspapers;  
8 newspapers; 5; 6; 9; 3; 4; 7.

5. 4 rows of chairs with 8 chairs in a row are ? chairs.

6. How many quarters can you get for \$1?  
for \$4? \$6? \$7? \$8? \$9?



Think twice!

Jane found the answer to  $7 \times 4$  this way:  $\rightarrow$   
How many different ways can you use to find  
the answer to  $6 \times 4$ ?  $8 \times 4$ ?  $9 \times 4$ ?

4 fours = 16  
3 fours = 12  
7 fours = 28



## Using fours in division

1. Copy and finish this multiplication table of 4's. Go up to  $9 \times 4 = 36$ .  $\longrightarrow$

$$1 \times 4 = 4$$

$$2 \times 4 = 8$$

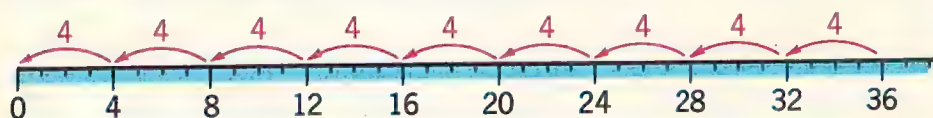
$$3 \times 4 = 12$$

2. Write two division facts that each multiplication fact in the table teaches. Begin this way:

$$/ \times 4 = 4 \quad 4 \div / = 4 \quad 4 \div 4 = /$$

$$2 \times 4 = 8 \quad 8 \div 2 = 4 \quad 8 \div 4 = 2$$

3. The red lines on this number line begin at 36, and mark off 4's. How many 4's are there in 28? in 16? in 24?



4. Find the answers on the number line.

$$4 \overline{)12} \quad 4 \overline{)24} \quad 4 \overline{)16} \quad 4 \overline{)36} \quad 4 \overline{)32} \quad 4 \overline{)28} \quad 4 \overline{)20}$$

5. Show by subtractions that:

$$16 \div 4 = 4 \quad 24 \div 4 = 6 \quad 28 \div 4 = 7 \quad 32 \div 4 = 8$$

6.  $4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 36$  shows there are   9   4's in 36.

— Find the number N stands for in each of these examples.

$$7. N \times 4 = 8 \quad 4 \times N = 12 \quad N \times 4 = 16 \quad N \times 4 = 32$$

$$8. 4 \times N = 20 \quad N \times 4 = 36 \quad 4 \times N = 24 \quad 4 \times N = 28$$

Think twice!

Tom found the answer to  $24 \div 4$  this way:  $\longrightarrow$

How many different ways can you use to find the answer to  $16 \div 4$ ;  $32 \div 4$ ;  $24 \div 4$ ;  $36 \div 4$ ?

In 12 there are 3 fours

In 12 there are 3 fours

In 24 there are 6 fours

# Division facts of fours

1. Read the division facts in this table.

Division Facts of Fours								
$\begin{array}{r} 1 \\ 4 \overline{)4} \end{array}$	$\begin{array}{r} 2 \\ 4 \overline{)8} \end{array}$	$\begin{array}{r} 3 \\ 4 \overline{)12} \end{array}$	$\begin{array}{r} 4 \\ 4 \overline{)16} \end{array}$	$\begin{array}{r} 5 \\ 4 \overline{)20} \end{array}$	$\begin{array}{r} 6 \\ 4 \overline{)24} \end{array}$	$\begin{array}{r} 7 \\ 4 \overline{)28} \end{array}$	$\begin{array}{r} 8 \\ 4 \overline{)32} \end{array}$	$\begin{array}{r} 9 \\ 4 \overline{)36} \end{array}$
$\begin{array}{r} 4 \\ 1 \overline{)4} \end{array}$	$\begin{array}{r} 4 \\ 2 \overline{)8} \end{array}$	$\begin{array}{r} 4 \\ 3 \overline{)12} \end{array}$	$\begin{array}{r} 4 \\ 4 \overline{)16} \end{array}$	$\begin{array}{r} 4 \\ 5 \overline{)20} \end{array}$	$\begin{array}{r} 4 \\ 6 \overline{)24} \end{array}$	$\begin{array}{r} 4 \\ 7 \overline{)28} \end{array}$	$\begin{array}{r} 4 \\ 8 \overline{)32} \end{array}$	$\begin{array}{r} 4 \\ 9 \overline{)36} \end{array}$

2. Practice until you can say every answer.

$$\begin{array}{cccccccccc} 4 \overline{)8} & 4 \overline{)16} & 4 \overline{)24} & 4 \overline{)36} & 8 \overline{)32} & 1 \overline{)4} & 7 \overline{)28} & 4 \overline{)12} & 4 \overline{)20} \\ 5 \overline{)20} & 4 \overline{)0} & 3 \overline{)12} & 4 \overline{)32} & 4 \overline{)4} & 6 \overline{)24} & 2 \overline{)8} & 4 \overline{)28} & 9 \overline{)36} \end{array}$$

3. Copy Exercise 2 and write the answers. Make and study Help-Yourself Cards for the facts you do not know.

4. How many of these pencils can you get for 32¢? for 36¢? 24¢? 28¢? 20¢? 12¢? 8¢? 16¢? 4¢?

5. Barbara has a yard of ribbon. She can make   ?   4-inch bookmarks;   ?   3-inch bookmarks.

6. At 4 nails for a penny, find the cost of: 8 nails; 16; 12; 28; 20; 32; 24; 36.



PENCIL  
4¢ each

Think twice!

$\begin{array}{r} 432 \\ a \ 1 \overline{)432} \end{array}$	$\begin{array}{r} 216 \\ b \ 2 \overline{)432} \end{array}$	$\begin{array}{r} 144 \\ c \ 3 \overline{)432} \end{array}$	$\begin{array}{r} ??? \\ d \ 4 \overline{)432} \end{array}$
---	---	---	---

7. Will the answer to Example *d* in the box above be larger or smaller than the other answers? Explain why.

8. Will the answer to Example *d* be as much as 100? more than 100? Can you find the answer?

# Finding one fourth of a number

TRY  
IT

- Deal out 36 cards to 4 people. How many cards does each person get?  $\frac{1}{4}$  of 36 =  $\underline{\quad}$ .
- Divide 36 cards into groups of 4 cards each. How many groups of 4 are there?  $36 \div 4 = \underline{\quad}$ .

1. When 4 boys share a brick of ice cream equally, what part of the brick does each boy get?

2. When 4 boys share 24 stamps equally, each boy gets  $\frac{1}{4}$  of 24 stamps, or  $\underline{\quad}$  stamps.  $\frac{1}{4}$  of 24 =  $\underline{\quad}$ .  $24 \div 4 = \underline{\quad}$ .

■ To find  $\frac{1}{4}$  of a number, divide the number by 4.

— Find  $\frac{1}{4}$  of each of these numbers.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
3.	32	36	28	24	16	48	84	80
4.	128	368	248	204	320	328	280	288

When you divide a whole, or group, into 4 equal parts, each part is called *one fourth*, or *one quarter*, of the whole or group. *One quarter* and *one fourth* mean the same.

5. Why do we call a 25-cent piece “a quarter”?

6. 1 ft. =  $\underline{\quad}$  in.

$\frac{1}{2}$  ft. =  $\underline{\quad}$  in.

$\frac{1}{4}$  ft. =  $\underline{\quad}$  in.

7. 1 yd. =  $\underline{\quad}$  in.

$\frac{1}{2}$  yd. =  $\underline{\quad}$  in.

$\frac{1}{4}$  yd. =  $\underline{\quad}$  in.

8. 1 lb. =  $\underline{\quad}$  oz.

$\frac{1}{2}$  lb. =  $\underline{\quad}$  oz.

$\frac{1}{4}$  lb. =  $\underline{\quad}$  oz.

9. 1 gal. =  $\underline{\quad}$  pt.

$\frac{1}{2}$  gal. =  $\underline{\quad}$  pt.

$\frac{1}{4}$  gal. =  $\underline{\quad}$  pt.

# Multiplying and dividing with fours

— Multiply. Check. Estimate to see if each answer is sensible.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $\begin{array}{r} 24 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} \$ .70 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ .32 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ .62 \\ \times 4 \\ \hline \end{array}$
2. $\begin{array}{r} 18 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ .84 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ .56 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ .47 \\ \times 4 \\ \hline \end{array}$
3. $\begin{array}{r} 800 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 600 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 700 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 7.01 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 4.20 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.02 \\ \times 4 \\ \hline \end{array}$
4. $\begin{array}{r} 412 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 621 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 822 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.20 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 4.00 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 4.70 \\ \times 4 \\ \hline \end{array}$

— Divide. Check. Estimate to see if each answer is sensible.

5. $4 \overline{)48}$	$4 \overline{)80}$	$4 \overline{)88}$	$4 \overline{)\$1.24}$	$4 \overline{)\$3.28}$	$6 \overline{)\$2.40}$
6. $4 \overline{)368}$	$4 \overline{)280}$	$3 \overline{)243}$	$4 \overline{)\$.84}$	$4 \overline{)\$2.48}$	$4 \overline{)\$3.20}$
7. $4 \overline{)324}$	$3 \overline{)189}$	$4 \overline{)204}$	$4 \overline{)\$2.00}$	$4 \overline{)\$1.64}$	$4 \overline{)\$2.88}$
8. $5 \overline{)100}$	$4 \overline{)364}$	$7 \overline{)287}$	$8 \overline{)\$3.20}$	$6 \overline{)\$2.40}$	$9 \overline{)\$3.60}$

9. Find the cost of:

- 4 yards of nylon at \$1.20 a yard; at \$3.12 a yard.
- a quarter of a yard of lace at 88¢ a yard.

Think twice!

- Three quarters of a yard =   ?   inches.
- Three quarters of a pound =   ?   ounces.
- Three quarters of an hour =   ?   minutes.
- Three quarters of a dollar =   ?   cents.
- Three quarters of a gallon =   ?   pints.





# Remainders in division

TRY  
IT

- How many groups of 4 counters can you make with 8 counters? 9? 10? 11? 12? 13? 14? 15? 16?
- How many counters will you have left over each time?

1. Look at these circles and say, "How many 4's in 4? One. How many 4's in 5? One and 1 over," and so on.

2. Name all of the numbers from 4 to 40 that, when divided by 4, have no remainder.

3. Name all of the numbers from 4 to 40 that, when divided by 4, have a remainder.

4. Name the Dividing-by-Four Helping Numbers.

5. What helping number will you use in dividing each of these numbers by 4?

14	39	33	13	18	35	10
25	37	15	21	38	23	22
30	11	7	5	27	29	34

6. Divide each number in Exercise 5 by 4. Say the answers. Tell what subtraction you do to find the remainder. Write your division this way: →



$$\begin{array}{r} 3 \text{ r}2 \\ 4 \overline{)14} \\ - 12 \\ \hline 2 \end{array}$$

7. How many gallons are there in 4 qt.? 8? 9? 13? 15?

8. Tim has 9 quarters. If he has them changed into dollars, he will have ? dollars and ? quarter.

# Test on multiplication and division facts

— Write answers on folded paper. If you make mistakes, study your Help-Yourself Cards. Write the answers again.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
1.	$\begin{array}{r} 2 \\ \underline{1} \end{array}$	$\begin{array}{r} 3 \\ \underline{3} \end{array}$	$\begin{array}{r} 5 \\ \underline{7} \end{array}$	$\begin{array}{r} 3 \\ \underline{5} \end{array}$	$\begin{array}{r} 5 \\ \underline{5} \end{array}$	$\begin{array}{r} 5 \\ \underline{8} \end{array}$	$\begin{array}{r} 4 \\ \underline{4} \end{array}$	$\begin{array}{r} 4 \\ \underline{3} \end{array}$	$\begin{array}{r} 8 \\ \underline{5} \end{array}$	$\begin{array}{r} 2 \\ \underline{7} \end{array}$

2.	$\begin{array}{r} 6 \\ \underline{2} \end{array}$	$\begin{array}{r} 7 \\ \underline{5} \end{array}$	$\begin{array}{r} 2 \\ \underline{2} \end{array}$	$\begin{array}{r} 6 \\ \underline{4} \end{array}$	$\begin{array}{r} 3 \\ \underline{4} \end{array}$	$\begin{array}{r} 3 \\ \underline{7} \end{array}$	$\begin{array}{r} 3 \\ \underline{9} \end{array}$	$\begin{array}{r} 3 \\ \underline{2} \end{array}$	$\begin{array}{r} 7 \\ \underline{4} \end{array}$	$\begin{array}{r} 4 \\ \underline{8} \end{array}$
----	---	---	---	---	---	---	---	---	---	---

3.	$\begin{array}{r} 1 \\ \underline{3} \end{array}$	$\begin{array}{r} 5 \\ \underline{3} \end{array}$	$\begin{array}{r} 2 \\ \underline{3} \end{array}$	$\begin{array}{r} 7 \\ \underline{3} \end{array}$	$\begin{array}{r} 5 \\ \underline{4} \end{array}$	$\begin{array}{r} 4 \\ \underline{1} \end{array}$	$\begin{array}{r} 4 \\ \underline{5} \end{array}$	$\begin{array}{r} 8 \\ \underline{4} \end{array}$	$\begin{array}{r} 6 \\ \underline{3} \end{array}$	$\begin{array}{r} 5 \\ \underline{6} \end{array}$
----	---	---	---	---	---	---	---	---	---	---

4.	$\begin{array}{r} 9 \\ \underline{4} \end{array}$	$\begin{array}{r} 5 \\ \underline{9} \end{array}$	$\begin{array}{r} 2 \\ \underline{6} \end{array}$	$\begin{array}{r} 8 \\ \underline{3} \end{array}$	$\begin{array}{r} 4 \\ \underline{2} \end{array}$	$\begin{array}{r} 6 \\ \underline{5} \end{array}$	$\begin{array}{r} 5 \\ \underline{1} \end{array}$	$\begin{array}{r} 4 \\ \underline{6} \end{array}$	$\begin{array}{r} 9 \\ \underline{2} \end{array}$	$\begin{array}{r} 8 \\ \underline{2} \end{array}$
----	---	---	---	---	---	---	---	---	---	---

5.	$\begin{array}{r} 9 \\ \underline{5} \end{array}$	$\begin{array}{r} 7 \\ \underline{2} \end{array}$	$\begin{array}{r} 3 \\ \underline{8} \end{array}$	$\begin{array}{r} 2 \\ \underline{4} \end{array}$	$\begin{array}{r} 4 \\ \underline{7} \end{array}$	$\begin{array}{r} 1 \\ \underline{5} \end{array}$	$\begin{array}{r} 4 \\ \underline{9} \end{array}$	$\begin{array}{r} 2 \\ \underline{9} \end{array}$	$\begin{array}{r} 1 \\ \underline{6} \end{array}$	$\begin{array}{r} 9 \\ \underline{3} \end{array}$
----	---	---	---	---	---	---	---	---	---	---

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
6.	$3 \overline{)3}$	$2 \overline{)18}$	$4 \overline{)20}$	$5 \overline{)45}$	$4 \overline{)24}$	$2 \overline{)12}$	$4 \overline{)32}$	$3 \overline{)24}$	$2 \overline{)4}$

7.	$6 \overline{)30}$	$3 \overline{)27}$	$5 \overline{)40}$	$6 \overline{)24}$	$4 \overline{)8}$	$3 \overline{)9}$	$2 \overline{)6}$	$5 \overline{)10}$	$2 \overline{)10}$
----	--------------------	--------------------	--------------------	--------------------	-------------------	-------------------	-------------------	--------------------	--------------------

8.	$4 \overline{)28}$	$5 \overline{)30}$	$2 \overline{)8}$	$7 \overline{)28}$	$3 \overline{)15}$	$9 \overline{)27}$	$5 \overline{)20}$	$7 \overline{)7}$	$4 \overline{)36}$
----	--------------------	--------------------	-------------------	--------------------	--------------------	--------------------	--------------------	-------------------	--------------------

9.	$5 \overline{)25}$	$7 \overline{)35}$	$2 \overline{)2}$	$4 \overline{)12}$	$7 \overline{)14}$	$5 \overline{)5}$	$8 \overline{)40}$	$3 \overline{)21}$	$3 \overline{)18}$
----	--------------------	--------------------	-------------------	--------------------	--------------------	-------------------	--------------------	--------------------	--------------------

10.	$6 \overline{)6}$	$2 \overline{)14}$	$8 \overline{)16}$	$5 \overline{)35}$	$9 \overline{)45}$	$7 \overline{)21}$	$8 \overline{)24}$	$2 \overline{)16}$	$9 \overline{)18}$
-----	-------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------

11.	$3 \overline{)6}$	$3 \overline{)12}$	$6 \overline{)18}$	$6 \overline{)12}$	$5 \overline{)15}$	$8 \overline{)32}$	$9 \overline{)9}$	$9 \overline{)36}$	$1 \overline{)8}$
-----	-------------------	--------------------	--------------------	--------------------	--------------------	--------------------	-------------------	--------------------	-------------------

# Keeping up in arithmetic

## Oral

— Tell the missing numbers.

1. 1 week = ? days
  2. 1 year = ? months
  3. 1 hour = ? minutes
  4. VIII = ?
  5. 1 quarter = ? nickels
  6. 1 dollar = ? dimes
  7. 1 pint = ? glasses
  8. 1 quart = ? pints
  9. 1 gallon = ? quarts
  10. 1 yard = ? inches
  11. 1 yard = ? feet
  12. 1 foot = ? inches
  13. 1 dozen = ? things
  14. 1 pair = ? things
  15. 80 = ? tens
  16. 3,500 = ? hundreds
- 
17. Would you estimate the cost of one of these arrows to be about \$1.50, or \$1.00?
18. Read these numbers: 705    892    1,225    1,476
19. How many sides has a square? a triangle?
20. A pint equals what part of a quart?
21. Don bought 6 dozen oranges. That was ? oranges.
22.  $\frac{1}{5}$  of 45 = ?    23.  $\frac{1}{2}$  of 18 = ?    24.  $4 + 7 + 5 + 8 = \underline{\quad}$



## Written

- |  |  |  |  |
|--|--|--|--|
| 1. $\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$ | 2. $\begin{array}{r} 35 \\ \times 8 \\ \hline \end{array}$ | 3. $\begin{array}{r} \$ .23 \\ \times 7 \\ \hline \end{array}$ | 4. $\begin{array}{r} \$3.14 \\ \times 6 \\ \hline \end{array}$ |
| 5. $\$8.62 + \$5$  | 6. $\$8 - \$2.46$  | 7. $2 \overline{)48}$  | 8. $5 \overline{)48}$  |
| 9. $3 \overline{)129}$                                     | 10. $4 \overline{)168}$                                    |  |  |



## Dividing hundreds

At the seashore, Tom and Jeff found a can that had been buried in the sand. In it were 246 pennies. Can you tell how they could divide the pennies equally?

Here is Jeff's way of dividing 246 by 2.

Jeff thought:  $246 = 2 \text{ hundreds } 4 \text{ tens } 6 \text{ ones}$ .

$$\begin{array}{r} 123 \\ 2 \overline{)246} \end{array}$$

► He divided the hundreds.  $2 \div 2 = 1$ . Why did he write the 1 in hundreds place above the 2?

► He divided the tens.  $4 \div 2 = 2$ . Why did he write the 2 above the 4?

► He divided the ones.  $6 \div 2 = 3$ . Where did he write the 3? His division shows that  $246 \div 2 = \underline{\quad}$ .

— Copy and divide.

- | <i>a</i>               | <i>b</i>            | <i>c</i>            | <i>d</i>            | <i>e</i>            | <i>f</i>            | <i>g</i>            |
|------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 1. $2 \overline{)486}$ | $3 \overline{)639}$ | $4 \overline{)844}$ | $3 \overline{)663}$ | $2 \overline{)826}$ | $2 \overline{)408}$ | $2 \overline{)640}$ |
| 2. $3 \overline{)339}$ | $2 \overline{)280}$ | $3 \overline{)360}$ | $5 \overline{)550}$ | $4 \overline{)488}$ | $2 \overline{)480}$ | $2 \overline{)806}$ |

3. Estimate which of these answers will be less than 100. Then work each example.

$$2 \overline{)468} \quad 2 \overline{)186} \quad 5 \overline{)255} \quad 3 \overline{)279} \quad 4 \overline{)208} \quad 2 \overline{)164} \quad 3 \overline{)636}$$



## Half-Price Sale

	REGULAR PRICE		REGULAR PRICE
FOOTBALL	\$4.80	BASEBALL BAT	\$4.68
BASEBALL	\$2.00	PUNCHING BAG	\$8.80
		FOOTBALL HELMET	\$6.20

### The half-price sale

1. This is the way Walter found how much he would have to pay for a football at the Half-Price Sale.

Explain his work:  $\xrightarrow{\hspace{2cm}}$   $\begin{array}{r} \$2.40 \\ 2 \overline{) \$4.80} \end{array}$

2. How much would you have to pay for each of the other things at the Half-Price Sale?

3. In Exercises 4 through 6 find three divisions which will have answers of less than a dollar.

— Copy and divide.

- |                            |                             |                             |                            |                             |                             |
|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|
| <i>a</i>                   | <i>b</i>                    | <i>c</i>                    | <i>d</i>                   | <i>e</i>                    | <i>f</i>                    |
| 4. $2 \overline{) \$8.40}$ | 3. $3 \overline{) \$6.90}$  | 4. $4 \overline{) \$8.44}$  | 5. $5 \overline{) \$5.50}$ | 2. $2 \overline{) \$6.84}$  | 4. $4 \overline{) \$2.40}$  |
| 5. $2 \overline{) \$4.08}$ | 5. $5 \overline{) \$15.50}$ | 3. $3 \overline{) \$12.69}$ | 2. $2 \overline{) \$4.06}$ | 2. $2 \overline{) \$1.86}$  | 2. $2 \overline{) \$8.00}$  |
| 6. $3 \overline{) \$9.09}$ | 4. $4 \overline{) \$8.40}$  | 5. $5 \overline{) \$35.00}$ | 5. $5 \overline{) \$3.00}$ | 6. $6 \overline{) \$12.60}$ | 7. $7 \overline{) \$14.00}$ |

7. Roy can get a can of 3 tennis balls for \$3.30. The balls cost ? apiece.

8. Four boys together earned \$4.80 for cleaning a backyard. They shared the money equally. Each got ?.

9. At a sale Jane got 3 pairs of socks for \$1.26. How much did she pay for a pair?

Think twice! Timmy paid \$8.80 for 4 little pine trees. He sold them for \$2.75 apiece. How much did he make on each tree? on all 4 trees?

Practice for excellence. Do Practice Set 48, page 326.



# Dividing larger numbers

*a*  $3 \overline{)609}$       *b*  $4 \overline{)328}$       *c*  $3 \overline{)960}$       *d*  $4 \overline{)448}$       *e*  $3 \overline{)186}$

1. Which of the divisions above will have an answer of more than 100? less than 100? How can you tell?
2. Which will have an answer of about 300? about 200? about 80? about 60? between 100 and 200?
3. Without using a pencil, can you tell the answers to the examples above?

— Find the answers.

4.  $\frac{1}{3}$  of 69       $\frac{1}{3}$  of 150       $\frac{1}{3}$  of 180       $\frac{1}{3}$  of 690

5.  $\frac{1}{4}$  of 36       $\frac{1}{4}$  of 168       $\frac{1}{4}$  of 324       $\frac{1}{4}$  of 484

— Copy and divide.

*a*  $3 \overline{)156}$       *b*  $4 \overline{)48}$       *c*  $3 \overline{)213}$       *d*  $9 \overline{)270}$       *e*  $4 \overline{)164}$       *f*  $2 \overline{)186}$

7.  $4 \overline{)248}$        $3 \overline{)159}$        $3 \overline{)633}$        $4 \overline{)320}$        $3 \overline{)189}$        $4 \overline{)288}$

8.  $3 \overline{)366}$        $4 \overline{)120}$        $3 \overline{)69}$        $4 \overline{)364}$        $8 \overline{)240}$        $6 \overline{)180}$

9.  $7 \overline{)217}$        $3 \overline{)186}$        $4 \overline{)240}$        $5 \overline{)355}$        $4 \overline{)804}$        $3 \overline{)906}$

10. Molly bought a package of 96 flower seeds. If 3 children share the seeds equally, how many will each get?

11. Jane baked 84 cookies. If she packs them in bags, 4 cookies to a bag, how many bags will she need?



*Practice for excellence.* Do Practice Set 49, page 326.

# Be your own teacher OPTIONAL

1. Count to 400 by 25's. Now write the numbers.  
Begin: 25, 50, 75, and so on.
2. Count to 400 by 40's. Write: 40, 80, and so on.
3. Count to 600 by 60's. Write: 60, 120, and so on.
4.  $5 \times 60 = 300$ , so  $60 \times 5 = \underline{\quad}$ ;  $300 \div 5 = \underline{\quad}$ ;  $300 \div 60 = \underline{\quad}$ .
5. Donald multiplied a number that was a little smaller than 100 by 2. His answer was a little smaller than  $\underline{\quad}$ .
6. Donald said that  $5 \times 98$  is less than 500. How could he tell that?
7. Jane said that the answer to  $497 \div 5$  is less than 100. How could she tell that?
8. When Jeff opened his toy bank, he found 98 dimes, or nearly  $\underline{\quad}$  dollars.

9. Ann said that \$3.97 equals  $\underline{\quad}$  dimes and 7 pennies.

10. Tom said that if he kept on multiplying by 2, as shown here, one of his answers would be 2560.

Was he right?  $\longrightarrow$

11. Bill divided a number that was a little more than 200 by 2. His answer was a little more than  $\underline{\quad}$ .

12. One of these is not equal to the others. Which one is it?

a  $4 \overline{)128}$     b  $2 \times 2 \times 2 \times 2 \times 2$     c  $\frac{1}{2}$  of 64    d 32    e  $4 \times 128$

13. Which of these are equal?

a  $2 \overline{)600}$     b  $\frac{1}{2}$  of 600    c  $3 \overline{)900}$     d  $\frac{1}{4}$  of 1200    e  $4 \times 150$

$$\left. \begin{array}{r} 10 \\ \times 2 \\ \hline 20 \\ \times 2 \\ \hline 40 \\ \times 2 \\ \hline 80 \end{array} \right\}$$

## Thinking about problems

1. In Bill's classroom there are five tables. Six children sit at each table. How many children are in the class?

Think: At one table there are 6 children. At 5 tables there are  $5 \times 6$  children, or ? children.

2. Tell what you would think in finding how much 8 packages of paper cups cost at 5¢ a package; 5 packages of paper plates at 10¢ a package.

3. Tell what you would think in finding how many "hot dog" rolls there are in 2 dozen; in 3 dozen; in 4 dozen.

4. Peggy has 35¢. She wants to buy some 5-cent drinking glasses. How many glasses can she buy?

Think: She can buy 1 glass for each 5¢ of the 35¢; so she can buy as many glasses as there are 5's in 35. She can buy ? glasses.

5. Tell what you would think in finding how many 3-cent toys you could buy for 15¢; for 21¢; for 24¢; for 27¢.

6. Tell what you would think to find how many dollar bills you can get for 24 quarters.

7. Find the cost of half of a 40-cent cake.

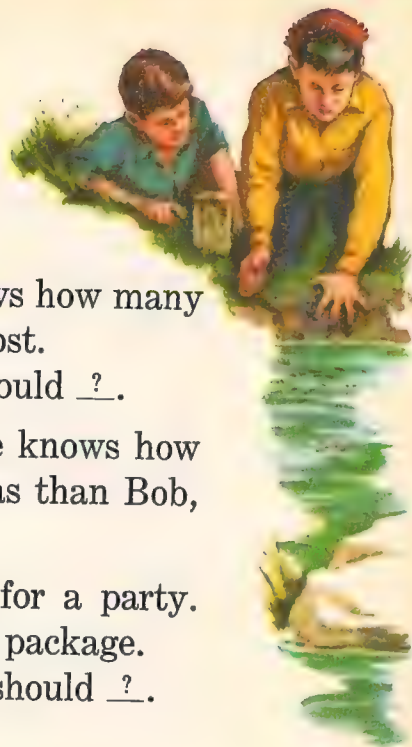
Think: The whole cake costs 40¢. One half of the cake costs  $\frac{1}{2}$  of 40¢, or ? ¢.

8. There are 30 peanuts in a bag. Tell what you would think in finding how many peanuts each boy should have, if 6 boys share them equally; 3 boys; 5 boys.

9. One pound of cheese costs \$.84. Tell what you would think to find how much one fourth of a pound will cost.



# Problems without numbers



1. Sam and Jack caught some tadpoles.  
To share them equally, they should   ?  .
2. Betsy mailed some Easter cards. She knows how many stamps she used and how much each stamp cost.  
To find the cost of all the stamps, Betsy should   ?  .
3. Tom knows how much money he has. He knows how much Bob has. To find how much less he has than Bob, Tom should   ?  .
4. Molly knows how many cookies she needs for a party. She knows how many cookies there are in one package.  
To find how many packages to buy, Molly should   ?  .

## Practice for speed and accuracy

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} 531 \\ 287 \\ 614 \\ + 513 \\ \hline \end{array}$	$\begin{array}{r} 208 \\ 24 \\ 765 \\ + 498 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 52 \\ 689 \\ + 735 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 316 \\ 25 \\ + 843 \\ \hline \end{array}$	$\begin{array}{r} 674 \\ 2 \\ 35 \\ + 918 \\ \hline \end{array}$
2.	$\begin{array}{r} 500 \\ - 387 \\ \hline \end{array}$	$\begin{array}{r} 658 \\ - 49 \\ \hline \end{array}$	$\begin{array}{r} 970 \\ - 709 \\ \hline \end{array}$	$\begin{array}{r} 807 \\ - 699 \\ \hline \end{array}$	$\begin{array}{r} 650 \\ - 586 \\ \hline \end{array}$
3.	$\begin{array}{r} \$3.21 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} \$9.32 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$5.23 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} \$3.10 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$8.31 \\ \times 3 \\ \hline \end{array}$
4.	$\begin{array}{r} \$3.10 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} \$5.00 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$5.11 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$3.02 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$5.33 \\ \times 4 \\ \hline \end{array}$
5.	$5 \overline{)250}$	$6 \overline{)186}$	$7 \overline{)217}$	$2 \overline{)486}$	$3 \overline{)276}$
6.	$3 \overline{)\$1.89}$	$2 \overline{)\$8.46}$	$8 \overline{)\$2.48}$	$4 \overline{)\$8.08}$	$5 \overline{)\$3.55}$

## PROBLEM TEST 7



1. How much will six 4-cent stamps cost?
2. Jane, Dick, and Don each gave the organ-grinder's monkey a nickel. How much did they give in all?
3. Don caught 39 tadpoles. He said  $\frac{1}{3}$  of them turned into frogs. How many turned into frogs?
4. When Jane got her kitten it weighed only 13 ounces. Now it weighs a pound. It has gained   ? ounces.
5. Find the cost of caps for the nine members of a baseball team at \$.35 each.
6. A license for Jane's dog costs \$1.50. A dog collar costs \$1.59. How much does Jane have to pay for both license and collar?
7. How much will play shoes for the 4 children in Dick's family cost at \$3.15 a pair?
8. Scottie had \$6.50. He spent \$4.79 for skates. How much did he have left?
9. Carl got a Build-Your-Own Airplane Kit. The kit cost \$4.98. From the kit Carl made 5 planes.  
Would you estimate that each plane cost Carl about \$.50, about \$1.00, or about \$2.00?
10. Sally can get 3 sticks of chalk for one cent. How many cents worth of chalk will she need to buy if she wants to have 24 sticks of chalk? Draw a picture of this problem.

Write your score on your Problem Test Record.

# IT'S CHECK-UP TIME



$$\begin{array}{r} 1. \$7.12 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2. 802 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 3. 506 \\ \times 4 \\ \hline \end{array}$$

$$4. 2\overline{)68}$$

$$5. 3\overline{)279}$$

$$6. \frac{1}{3} \text{ of } 246$$

7. Bobby needs 15 feet of rope for his rowboat. Will a piece 5 yards long be long enough?

8. At a Half-Price Sale, how much will a tennis racket cost, if the regular price is \$8.40?

9. Three boys plan to share the cost of painting a boat. How much should each boy pay if the paint costs 60¢?

10. Judy bought a box of Pup Crackers. There are 4 layers in the box. There are 16 crackers in each layer. How many crackers are there in the box?

**If you have time, try these –**

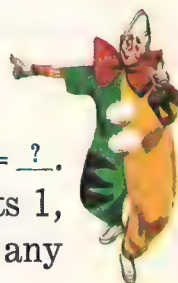
11. Six boys found 43¢. If they share the money equally each boy will get   ¢, and there will be   ¢ left over.

12. Find the cost of  $2\frac{1}{2}$  yards of velvet that sells for \$2.88 a yard.

J U S T F O R F U N

- Take one look and tell the answer:  $5 \times 3 \times 2 \times 1 \times 0 = ?$ .
- John can write 6 three-place numbers with the digits 1, 2, and 3. He does not use the same digit twice in any number. Can you do it?
- Mary needs to measure out 2 quarts of milk. She has no quart measure, but she found this measuring tin.

How can Mary use it to measure the milk?



## Practice for excellence

### PRACTICE SET 1, Addition (page 22)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
1. 1	5	2	3	5	5	1	1	3	2
3	2	7	4	4	3	4	5	4	6
<u>4</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>2</u>
2. 4	3	3	2	4	3	2	2	6	4
2	2	3	2	3	6	4	1	2	2
<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>6</u>	<u>2</u>	<u>4</u>

### PRACTICE SET 2, Addition (page 23)

1. 4	5	3	4	3	5	3	3	5	9
2	0	4	6	4	4	3	5	2	0
<u>3</u>	<u>2</u>	<u>3</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>0</u>
2. 4	4	2	0	6	5	4	4	5	4
0	3	3	2	3	4	0	3	0	5
<u>6</u>	<u>2</u>	<u>5</u>	<u>6</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>3</u>	<u>1</u>

### PRACTICE SET 3, Addition (page 67)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1. 43	33	53	16	31	15	41	34
<u>32</u>	<u>46</u>	<u>12</u>	<u>53</u>	<u>67</u>	<u>34</u>	<u>58</u>	<u>33</u>
2. 54	52	21	84	34	11	21	22
<u>13</u>	<u>46</u>	<u>31</u>	<u>14</u>	<u>22</u>	<u>47</u>	<u>18</u>	<u>24</u>

### PRACTICE SET 4, Addition (page 77)

1. 20	30	40	19	68	10	20	40
<u>54</u>	<u>63</u>	<u>37</u>	<u>50</u>	<u>30</u>	<u>36</u>	<u>30</u>	<u>24</u>
2. 20	11	35	54	22	40	23	21
13	50	34	13	30	40	40	14
<u>64</u>	<u>33</u>	<u>20</u>	<u>10</u>	<u>26</u>	<u>18</u>	<u>12</u>	<u>50</u>



# PRACTICE SET 5, Addition (page 87)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 30 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 93 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 83 \\ 44 \\ \hline \end{array}$	$\begin{array}{r} 61 \\ 55 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 66 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 43 \\ \hline \end{array}$
2.	$\begin{array}{r} 91 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 83 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ 63 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 84 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 91 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 66 \\ \hline \end{array}$

# PRACTICE SET 6, Addition (page 105)

1.	$\begin{array}{r} 57 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 71 \\ 94 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 92 \\ \hline \end{array}$
2.	$\begin{array}{r} 48 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 29 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 47 \\ \hline \end{array}$
3.	$\begin{array}{r} 84 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 33 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 65 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 17 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 93 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ 19 \\ \hline \end{array}$

# PRACTICE SET 7, Addition (page 106)

1.	$\begin{array}{r} \$ .25 \\ .66 \\ \hline \end{array}$	$\begin{array}{r} \$ .34 \\ .63 \\ \hline \end{array}$	$\begin{array}{r} \$ .16 \\ .59 \\ \hline \end{array}$	$\begin{array}{r} \$ .59 \\ .37 \\ \hline \end{array}$	$\begin{array}{r} \$ .34 \\ .39 \\ \hline \end{array}$	$\begin{array}{r} \$ .58 \\ .38 \\ \hline \end{array}$	$\begin{array}{r} \$ .57 \\ .19 \\ \hline \end{array}$	$\begin{array}{r} \$ .28 \\ .68 \\ \hline \end{array}$
----	--	--	--	--	--	--	--	--

2.	$\$ .13 + \$ .78$	$\$ .25 + \$ .34 + \$ .23$	$\$ .34 + \$ .05 + \$ .47$
3.	$\$ .54 + \$ .26$	$\$ .10 + \$ .08 + \$ .34$	$\$ .16 + \$ .28 + \$ .50$

# PRACTICE SET 8, Addition (page 124)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$34 + 5$	$23 + 6$	$43 + 4$	$61 + 5$	$46 + 3$
2.	$51 + 3$	$86 + 1$	$25 + 4$	$60 + 3$	$74 + 3$
3.	$82 + 6$	$52 + 3$	$74 + 4$	$64 + 5$	$84 + 2$
4.	$53 + 5$	$42 + 2$	$82 + 4$	$37 + 2$	$90 + 9$
5.	$47 + 2$	$35 + 3$	$22 + 7$	$13 + 4$	$46 + 3$

# PRACTICE SET 9, Addition (page 125)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1. $15 + 7$	$37 + 3$	$55 + 4$	$77 + 7$	$28 + 2$
2. $16 + 6$	$46 + 3$	$17 + 6$	$45 + 6$	$23 + 4$
3. $28 + 6$	$37 + 4$	$39 + 5$	$45 + 5$	$87 + 5$
4. $56 + 4$	$26 + 8$	$57 + 2$	$68 + 3$	$74 + 9$
5. $59 + 4$	$66 + 2$	$79 + 3$	$65 + 7$	$19 + 5$

# PRACTICE SET 10, Addition (page 126)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
1. $\begin{array}{r} 8 \\ 6 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 7 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 9 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 5 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 8 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 6 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 2 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 5 \\ 6 \\ \hline \end{array}$
2. $\begin{array}{r} 9 \\ 5 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 8 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 5 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 9 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 6 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 8 \\ 4 \\ \hline \end{array}$

# PRACTICE SET 11, Addition (page 126)

1. $\begin{array}{r} 7 \\ 6 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 6 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 5 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 7 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 8 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 5 \\ 6 \\ \hline \end{array}$
2. $\begin{array}{r} 8 \\ 6 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 7 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 5 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 8 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 6 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 8 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 2 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 5 \\ 9 \\ \hline \end{array}$

# PRACTICE SET 12, Addition (page 127)

1. $\begin{array}{r} 33 \\ 24 \\ 15 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 24 \\ 15 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ 4 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ 6 \\ 25 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 45 \\ 13 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 23 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 58 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 26 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ 14 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 26 \\ 30 \\ \hline \end{array}$
2. $\begin{array}{r} 48 \\ 8 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 24 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 17 \\ 14 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 25 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 25 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ 7 \\ 25 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 20 \\ 19 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 10 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ 9 \\ 69 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ 54 \\ 35 \\ \hline \end{array}$

**PRACTICE SET 13, Addition (page 133)**

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
1. 95 <u>82</u>	71 <u>56</u>	36 <u>90</u>	91 <u>63</u>	46 <u>83</u>	81 <u>75</u>	93 <u>94</u>	83 <u>96</u>	84 <u>74</u>	73 <u>92</u>
2. 58 <u>91</u>	82 <u>53</u>	92 <u>96</u>	75 <u>71</u>	94 <u>33</u>	80 <u>83</u>	63 <u>83</u>	95 <u>74</u>	94 <u>82</u>	71 <u>94</u>

**PRACTICE SET 14, Addition (page 148)**

1. 8 5 4 <u>5</u>	9 2 5 <u>4</u>	4 8 6 <u>5</u>	6 6 8 <u>6</u>	3 8 5 <u>7</u>	6 5 0 <u>7</u>	3 9 5 <u>7</u>	6 4 8 <u>4</u>	6 7 6 <u>3</u>	8 6 6 <u>6</u>
2. 5 7 4 <u>7</u>	9 5 6 <u>5</u>	2 9 7 <u>6</u>	9 4 9 <u>1</u>	7 4 2 <u>9</u>	9 3 9 <u>4</u>	3 7 6 <u>8</u>	4 9 9 <u>0</u>	6 8 3 <u>2</u>	5 9 7 <u>2</u>

**PRACTICE SET 15, Addition (page 153)**

1. \$1.23 <u>4.65</u>	\$4.53 <u>1.21</u>	\$2.32 <u>7.54</u>	\$2.12 <u>2.80</u>	\$4.34 <u>2.24</u>	\$8.12 <u>.13</u>	\$7.42 <u>.23</u>
2. 123 <u>532</u>	254 <u>613</u>	356 <u>340</u>	166 <u>603</u>	103 <u>544</u>	300 <u>675</u>	527 <u>400</u>

**PRACTICE SET 16, Addition (page 157)**

1. \$4.37 <u>2.45</u>	\$2.17 <u>3.47</u>	\$3.07 <u>4.55</u>	\$2.69 <u>3.15</u>	\$7.67 <u>.08</u>	\$9.24 <u>.46</u>	\$8.39 <u>.26</u>
2. 828 <u>55</u>	406 <u>374</u>	629 <u>214</u>	588 <u>304</u>	206 <u>536</u>	414 <u>469</u>	329 <u>563</u>

<i>a</i>	<i>b</i>	<i>c</i>
3. 107 + 383 285 + 718	656 + 27 547 + 33	467 + 29 375 + 618

PRACTICE SET 17, Addition (page 161)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. 320 196 <u>   </u>	148 281 <u>   </u>	362 453 <u>   </u>	295 334 <u>   </u>	482 176 <u>   </u>	546 93 <u>   </u>	637 182 <u>   </u>
2. 879 80 <u>   </u>	794 165 <u>   </u>	256 682 <u>   </u>	463 474 <u>   </u>	95 972 <u>   </u>	80 882 <u>   </u>	678 171 <u>   </u>

PRACTICE SET 18, Addition (page 163)

1. 248 485 <u>   </u>	197 217 <u>   </u>	378 429 <u>   </u>	559 155 <u>   </u>	669 258 <u>   </u>	178 746 <u>   </u>	587 338 <u>   </u>
2. 466 289 <u>   </u>	389 389 <u>   </u>	466 488 <u>   </u>	258 297 <u>   </u>	165 89 <u>   </u>	307 99 <u>   </u>	403 97 <u>   </u>
3. 169 357 <u>   </u>	245 276 <u>   </u>	236 94 <u>   </u>	857 44 <u>   </u>	439 261 <u>   </u>	248 352 <u>   </u>	159 166 <u>   </u>

PRACTICE SET 19, Addition (page 164)

1. 468 79 <u>   </u>	327 86 <u>   </u>	476 113 <u>   </u>	465 24 <u>   </u>	146 104 <u>   </u>	317 83 <u>   </u>	476 109 <u>   </u>
2. 324 129 283 <u>   </u>	149 58 372 <u>   </u>	47 256 343 <u>   </u>	456 348 63 <u>   </u>	287 36 454 <u>   </u>	189 136 154 <u>   </u>	307 285 196 <u>   </u>
3. \$4.35 2.86 1.43 <u>   </u>	\$5.07 6.00 .96 <u>   </u>	\$4.38 2.75 1.32 <u>   </u>	\$4.73 .06 2.70 <u>   </u>	\$6.25 .73 1.24 <u>   </u>	\$1.84 .09 3.15 <u>   </u>	\$1.40 2.60 3.79 <u>   </u>

PRACTICE SET 20, Addition (page 166)

- |                    |                           |                            |
|--------------------|---------------------------|----------------------------|
| 1. \$1.89 + \$2.35 | 6. \$2.63 + \$.07 + \$4   | 11. \$4 + \$.35 + \$.09    |
| 2. \$2.87 + \$4.63 | 7. \$5 + \$.08 + \$2.64   | 12. \$4.72 + \$.46 + \$.65 |
| 3. \$7.49 + \$.49  | 8. \$.98 + \$.07 + \$2.45 | 13. \$5 + \$2.47 + \$.35   |
| 4. \$8.33 + \$.75  | 9. \$2.42 + \$.60 + \$12  | 14. \$.27 + \$1.39 + \$.72 |
| 5. \$9.47 + \$.98  | 10. \$3.78 + \$.75 + \$8  | 15. \$4 + \$95 + \$75      |



**PRACTICE SET 21, Addition** (page 226)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	274 32 109 <u>272</u>	253 42 234 <u>116</u>	328 347 160 <u>103</u>	347 06 453 <u>221</u>	387 46 300 <u>53</u>	463 185 204 <u>45</u>	214 376 83 <u>404</u>
2.	536 287 42 <u>134</u>	106 284 416 <u>303</u>	208 354 135 <u>101</u>	462 100 387 <u>46</u>	287 43 124 <u>53</u>	348 95 142 <u>131</u>	684 29 124 <u>41</u>

**PRACTICE SET 22, Addition** (See note in Teacher's Edition, page 255.)

1.	287 349 <u>867</u>	469 287 <u>563</u>	287 328 <u>499</u>	689 777 <u>878</u>	469 274 <u>585</u>	624 978 <u>569</u>	678 488 <u>379</u>
2.	287 469 <u>328</u>	674 267 <u>489</u>	324 387 <u>299</u>	483 276 <u>497</u>	567 839 <u>295</u>	478 565 <u>324</u>	281 999 <u>898</u>

**PRACTICE SET 23, Addition** (See note in Teacher's Edition, page 255.)

1.	8463 9874 2864 <u>1706</u>	9406 2875 3987 <u>2069</u>	4380 795 9863 <u>2874</u>	4687 875 9634 <u>88</u>	2986 3475 987 <u>2836</u>	6874 2853 8006 <u>9294</u>	3875 2843 3698 <u>946</u>
----	-------------------------------------	-------------------------------------	------------------------------------	----------------------------------	------------------------------------	-------------------------------------	------------------------------------

**PRACTICE SET 24, Addition** (See note in Teacher's Edition, page 255.)

- |                     |                       |                       |
|---------------------|-----------------------|-----------------------|
| 1. $862 + 53 + 607$ | 6. $387 + 98 + 735$   | 11. $735 + 894 + 289$ |
| 2. $350 + 876 + 59$ | 7. $468 + 275 + 69$   | 12. $654 + 75 + 388$  |
| 3. $463 + 287 + 56$ | 8. $409 + 387 + 67$   | 13. $679 + 503 + 298$ |
| 4. $750 + 46 + 488$ | 9. $72 + 305 + 279$   | 14. $467 + 78 + 786$  |
| 5. $32 + 87 + 465$  | 10. $986 + 845 + 763$ | 15. $556 + 779 + 875$ |

PRACTICE SET 25, Subtraction (page 69)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1. $\begin{array}{r} 57 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 33 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ 62 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ 13 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 21 \\ \hline \end{array}$
2. $\begin{array}{r} 94 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 54 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 17 \\ \hline \end{array}$	$\begin{array}{r} 88 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} 97 \\ 62 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 31 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 87 \\ \hline \end{array}$
3. $\begin{array}{r} 49 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 62 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 97 \\ 43 \\ \hline \end{array}$

PRACTICE SET 26, Subtraction (page 78)

1. $\begin{array}{r} 98 \\ 20 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 2 \\ \hline \end{array}$
2. $\begin{array}{r} 87 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 54 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 3 \\ \hline \end{array}$

PRACTICE SET 27, Subtraction (page 88)

1. $\begin{array}{r} 130 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 120 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 128 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 136 \\ 96 \\ \hline \end{array}$	$\begin{array}{r} 115 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 116 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 138 \\ 70 \\ \hline \end{array}$
2. $\begin{array}{r} 126 \\ 51 \\ \hline \end{array}$	$\begin{array}{r} 120 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 120 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 129 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 117 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 128 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 139 \\ 90 \\ \hline \end{array}$
3. $\begin{array}{r} 100 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 126 \\ 86 \\ \hline \end{array}$	$\begin{array}{r} 115 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 120 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 124 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 105 \\ 54 \\ \hline \end{array}$	$\begin{array}{r} 134 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 136 \\ 64 \\ \hline \end{array}$
4. $\begin{array}{r} 104 \\ 94 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ 60 \\ \hline \end{array}$	$\begin{array}{r} 120 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 107 \\ 83 \\ \hline \end{array}$	$\begin{array}{r} 105 \\ 85 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ 60 \\ \hline \end{array}$	$\begin{array}{r} 137 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} 120 \\ 50 \\ \hline \end{array}$

PRACTICE SET 28, Subtraction (page 133)

1. $\begin{array}{r} 167 \\ 94 \\ \hline \end{array}$	$\begin{array}{r} 149 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 186 \\ 96 \\ \hline \end{array}$	$\begin{array}{r} 138 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 146 \\ 84 \\ \hline \end{array}$	$\begin{array}{r} 172 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 126 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 105 \\ 63 \\ \hline \end{array}$
2. $\begin{array}{r} 129 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} 107 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 156 \\ 62 \\ \hline \end{array}$	$\begin{array}{r} 119 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 127 \\ 64 \\ \hline \end{array}$	$\begin{array}{r} 118 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 160 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 125 \\ 82 \\ \hline \end{array}$
3. $\begin{array}{r} 118 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 147 \\ 73 \\ \hline \end{array}$	$\begin{array}{r} 118 \\ 74 \\ \hline \end{array}$	$\begin{array}{r} 179 \\ 94 \\ \hline \end{array}$	$\begin{array}{r} 139 \\ 65 \\ \hline \end{array}$	$\begin{array}{r} 109 \\ 83 \\ \hline \end{array}$	$\begin{array}{r} 139 \\ 54 \\ \hline \end{array}$	$\begin{array}{r} 169 \\ 78 \\ \hline \end{array}$

# PRACTICE SET 29, Subtraction (page 112)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1. $\begin{array}{r} 76 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 49 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ 33 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ 39 \\ \hline \end{array}$
2. $\begin{array}{r} 96 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 93 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ 14 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 38 \\ \hline \end{array}$
3. $\begin{array}{r} 130 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 183 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} 158 \\ 69 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 194 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 183 \\ 86 \\ \hline \end{array}$	$\begin{array}{r} 152 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 144 \\ 69 \\ \hline \end{array}$
4. $\begin{array}{r} 162 \\ 66 \\ \hline \end{array}$	$\begin{array}{r} 154 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 190 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 164 \\ 87 \\ \hline \end{array}$	$\begin{array}{r} 141 \\ 55 \\ \hline \end{array}$	$\begin{array}{r} 140 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 124 \\ 78 \\ \hline \end{array}$	$\begin{array}{r} 171 \\ 98 \\ \hline \end{array}$

# PRACTICE SET 30, Subtraction (page 113)

1. $\begin{array}{r} \$ .70 \\ .25 \\ \hline \end{array}$	$\begin{array}{r} \$ .80 \\ .45 \\ \hline \end{array}$	$\begin{array}{r} \$ .30 \\ .22 \\ \hline \end{array}$	$\begin{array}{r} \$ .60 \\ .49 \\ \hline \end{array}$	$\begin{array}{r} \$ .70 \\ .53 \\ \hline \end{array}$	$\begin{array}{r} \$ .90 \\ .28 \\ \hline \end{array}$	$\begin{array}{r} \$ .75 \\ .72 \\ \hline \end{array}$	$\begin{array}{r} \$ .69 \\ .63 \\ \hline \end{array}$
2. $\begin{array}{r} \$ .90 \\ .47 \\ \hline \end{array}$	$\begin{array}{r} \$ .76 \\ .08 \\ \hline \end{array}$	$\begin{array}{r} \$ .87 \\ .06 \\ \hline \end{array}$	$\begin{array}{r} \$ .35 \\ .08 \\ \hline \end{array}$	$\begin{array}{r} \$ .93 \\ .06 \\ \hline \end{array}$	$\begin{array}{r} \$ .74 \\ .08 \\ \hline \end{array}$	$\begin{array}{r} \$ .78 \\ .40 \\ \hline \end{array}$	$\begin{array}{r} \$ .86 \\ .50 \\ \hline \end{array}$
3. $\$ .70 - \$ .39$			6. $\$ .43 - \$ .09$			9. $\$ .85 - \$ .50$	
4. $\$ .80 - \$ .46$			7. $\$ .67 - \$ .09$			10. $\$ .79 - \$ .39$	
5. $\$ .90 - \$ .53$			8. $\$ .58 - \$ .06$			11. $\$ .83 - \$ .60$	

# PRACTICE SET 31, Subtraction (page 237)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} \$ 5.76 \\ 3.24 \\ \hline \end{array}$	$\begin{array}{r} \$ 8.58 \\ 4.27 \\ \hline \end{array}$	$\begin{array}{r} \$ 9.79 \\ 2.79 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.38 \\ 5.17 \\ \hline \end{array}$	$\begin{array}{r} \$ 7.85 \\ .33 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.78 \\ .56 \\ \hline \end{array}$	$\begin{array}{r} \$ 7.97 \\ .63 \\ \hline \end{array}$
2. $\begin{array}{r} 876 \\ 543 \\ \hline \end{array}$	$\begin{array}{r} 739 \\ 225 \\ \hline \end{array}$	$\begin{array}{r} 284 \\ 103 \\ \hline \end{array}$	$\begin{array}{r} 659 \\ 448 \\ \hline \end{array}$	$\begin{array}{r} 386 \\ 342 \\ \hline \end{array}$	$\begin{array}{r} 297 \\ 247 \\ \hline \end{array}$	$\begin{array}{r} 537 \\ 24 \\ \hline \end{array}$
3. $\begin{array}{r} 688 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 286 \\ 183 \\ \hline \end{array}$	$\begin{array}{r} 649 \\ 307 \\ \hline \end{array}$	$\begin{array}{r} 839 \\ 439 \\ \hline \end{array}$	$\begin{array}{r} 344 \\ 320 \\ \hline \end{array}$	$\begin{array}{r} 876 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} 432 \\ 12 \\ \hline \end{array}$
4. $\$ 7.53 - \$ 6.32$			6. $\$ 9.00 - \$ 6.00$			8. $684 - 350$
5. $\$ 6.84 - \$ .62$			7. $\$ 8.49 - \$ 6.05$			9. $796 - 283$

PRACTICE SET 32, Subtraction (page 240)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 585 \\ - 237 \\ \hline \end{array}$	$\begin{array}{r} 654 \\ - 127 \\ \hline \end{array}$	$\begin{array}{r} 782 \\ - 269 \\ \hline \end{array}$	$\begin{array}{r} 880 \\ - 246 \\ \hline \end{array}$	$\begin{array}{r} 863 \\ - 538 \\ \hline \end{array}$	$\begin{array}{r} 495 \\ - 307 \\ \hline \end{array}$	$\begin{array}{r} 587 \\ - 539 \\ \hline \end{array}$
2.	$\begin{array}{r} 456 \\ - 107 \\ \hline \end{array}$	$\begin{array}{r} 582 \\ - 278 \\ \hline \end{array}$	$\begin{array}{r} 364 \\ - 318 \\ \hline \end{array}$	$\begin{array}{r} 758 \\ - 309 \\ \hline \end{array}$	$\begin{array}{r} 963 \\ - 607 \\ \hline \end{array}$	$\begin{array}{r} 493 \\ - 446 \\ \hline \end{array}$	$\begin{array}{r} 375 \\ - 368 \\ \hline \end{array}$
3.	$\begin{array}{r} 990 \\ - 327 \\ \hline \end{array}$	$\begin{array}{r} 867 \\ - 129 \\ \hline \end{array}$	$\begin{array}{r} 982 \\ - 457 \\ \hline \end{array}$	$\begin{array}{r} 565 \\ - 309 \\ \hline \end{array}$	$\begin{array}{r} 640 \\ - 528 \\ \hline \end{array}$	$\begin{array}{r} 574 \\ - 309 \\ \hline \end{array}$	$\begin{array}{r} 997 \\ - 568 \\ \hline \end{array}$
4.	$\begin{array}{r} 864 \\ - 756 \\ \hline \end{array}$	$\begin{array}{r} 943 \\ - 539 \\ \hline \end{array}$	$\begin{array}{r} 750 \\ - 447 \\ \hline \end{array}$	$\begin{array}{r} 686 \\ - 509 \\ \hline \end{array}$	$\begin{array}{r} 456 \\ - 438 \\ \hline \end{array}$	$\begin{array}{r} 791 \\ - 757 \\ \hline \end{array}$	$\begin{array}{r} 721 \\ - 719 \\ \hline \end{array}$

PRACTICE SET 33, Subtraction (page 242)

1.	$\begin{array}{r} \$6.27 \\ - 2.63 \\ \hline \end{array}$	$\begin{array}{r} \$7.85 \\ - 4.92 \\ \hline \end{array}$	$\begin{array}{r} \$6.48 \\ - 5.90 \\ \hline \end{array}$	$\begin{array}{r} \$7.70 \\ - 1.25 \\ \hline \end{array}$	$\begin{array}{r} \$9.36 \\ - 4.80 \\ \hline \end{array}$	$\begin{array}{r} \$9.47 \\ - 6.85 \\ \hline \end{array}$	$\begin{array}{r} \$9.18 \\ - 4.95 \\ \hline \end{array}$
2.	$\begin{array}{r} \$8.29 \\ - 6.64 \\ \hline \end{array}$	$\begin{array}{r} \$9.33 \\ - 4.70 \\ \hline \end{array}$	$\begin{array}{r} \$6.17 \\ - 5.85 \\ \hline \end{array}$	$\begin{array}{r} \$8.26 \\ - 5.94 \\ \hline \end{array}$	$\begin{array}{r} \$6.72 \\ - 3.82 \\ \hline \end{array}$	$\begin{array}{r} \$9.04 \\ - 5.81 \\ \hline \end{array}$	$\begin{array}{r} \$8.67 \\ - 4.84 \\ \hline \end{array}$
3.	$\begin{array}{r} 859 \\ - 384 \\ \hline \end{array}$	$\begin{array}{r} 469 \\ - 395 \\ \hline \end{array}$	$\begin{array}{r} 848 \\ - 378 \\ \hline \end{array}$	$\begin{array}{r} 754 \\ - 699 \\ \hline \end{array}$	$\begin{array}{r} 829 \\ - 383 \\ \hline \end{array}$	$\begin{array}{r} 907 \\ - 465 \\ \hline \end{array}$	$\begin{array}{r} 656 \\ - 282 \\ \hline \end{array}$
4.	$\begin{array}{r} 835 \\ - 290 \\ \hline \end{array}$	$\begin{array}{r} 805 \\ - 593 \\ \hline \end{array}$	$\begin{array}{r} 859 \\ - 773 \\ \hline \end{array}$	$\begin{array}{r} 919 \\ - 376 \\ \hline \end{array}$	$\begin{array}{r} 908 \\ - 472 \\ \hline \end{array}$	$\begin{array}{r} 516 \\ - 464 \\ \hline \end{array}$	$\begin{array}{r} 806 \\ - 756 \\ \hline \end{array}$

PRACTICE SET 34, Subtraction (page 244)

1.	$\begin{array}{r} \$8.50 \\ - 2.75 \\ \hline \end{array}$	$\begin{array}{r} \$4.21 \\ - 1.85 \\ \hline \end{array}$	$\begin{array}{r} \$5.13 \\ - 1.34 \\ \hline \end{array}$	$\begin{array}{r} \$6.47 \\ - 4.78 \\ \hline \end{array}$	$\begin{array}{r} \$9.42 \\ - 7.35 \\ \hline \end{array}$	$\begin{array}{r} \$9.31 \\ - 2.82 \\ \hline \end{array}$	$\begin{array}{r} \$8.67 \\ - 1.89 \\ \hline \end{array}$
2.	$\begin{array}{r} 834 \\ - 476 \\ \hline \end{array}$	$\begin{array}{r} 621 \\ - 393 \\ \hline \end{array}$	$\begin{array}{r} 813 \\ - 745 \\ \hline \end{array}$	$\begin{array}{r} 402 \\ - 254 \\ \hline \end{array}$	$\begin{array}{r} 730 \\ - 189 \\ \hline \end{array}$	$\begin{array}{r} 626 \\ - 397 \\ \hline \end{array}$	$\begin{array}{r} 810 \\ - 246 \\ \hline \end{array}$
3.	$\begin{array}{r} 962 \\ - 787 \\ \hline \end{array}$	$\begin{array}{r} 934 \\ - 655 \\ \hline \end{array}$	$\begin{array}{r} 616 \\ - 248 \\ \hline \end{array}$	$\begin{array}{r} 422 \\ - 383 \\ \hline \end{array}$	$\begin{array}{r} 516 \\ - 499 \\ \hline \end{array}$	$\begin{array}{r} 621 \\ - 474 \\ \hline \end{array}$	$\begin{array}{r} 831 \\ - 255 \\ \hline \end{array}$
4.	$\begin{array}{r} 718 \\ - 489 \\ \hline \end{array}$	$\begin{array}{r} 942 \\ - 682 \\ \hline \end{array}$	$\begin{array}{r} 610 \\ - 358 \\ \hline \end{array}$	$\begin{array}{r} 843 \\ - 196 \\ \hline \end{array}$	$\begin{array}{r} 710 \\ - 237 \\ \hline \end{array}$	$\begin{array}{r} 943 \\ - 259 \\ \hline \end{array}$	$\begin{array}{r} 630 \\ - 345 \\ \hline \end{array}$



**PRACTICE SET 35, Subtraction (page 247)**

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} \$6.00 \\ 2.49 \\ \hline \end{array}$	$\begin{array}{r} \$8.00 \\ 2.75 \\ \hline \end{array}$	$\begin{array}{r} \$7.00 \\ 6.94 \\ \hline \end{array}$	$\begin{array}{r} \$5.00 \\ 2.98 \\ \hline \end{array}$	$\begin{array}{r} \$4.00 \\ 1.73 \\ \hline \end{array}$	$\begin{array}{r} \$6.00 \\ 5.27 \\ \hline \end{array}$	$\begin{array}{r} \$3.00 \\ 1.79 \\ \hline \end{array}$
2. $\begin{array}{r} \$8.03 \\ 2.47 \\ \hline \end{array}$	$\begin{array}{r} \$4.09 \\ 1.86 \\ \hline \end{array}$	$\begin{array}{r} \$5.06 \\ 3.48 \\ \hline \end{array}$	$\begin{array}{r} \$6.05 \\ 1.94 \\ \hline \end{array}$	$\begin{array}{r} \$7.04 \\ .97 \\ \hline \end{array}$	$\begin{array}{r} \$9.04 \\ 8.49 \\ \hline \end{array}$	$\begin{array}{r} \$7.63 \\ 6.95 \\ \hline \end{array}$
3. $\begin{array}{r} 700 \\ 346 \\ \hline \end{array}$	$\begin{array}{r} 600 \\ 249 \\ \hline \end{array}$	$\begin{array}{r} 700 \\ 204 \\ \hline \end{array}$	$\begin{array}{r} 700 \\ 493 \\ \hline \end{array}$	$\begin{array}{r} 500 \\ 298 \\ \hline \end{array}$	$\begin{array}{r} 300 \\ 294 \\ \hline \end{array}$	$\begin{array}{r} 700 \\ 199 \\ \hline \end{array}$
4. $\begin{array}{r} 605 \\ 284 \\ \hline \end{array}$	$\begin{array}{r} 907 \\ 709 \\ \hline \end{array}$	$\begin{array}{r} 605 \\ 340 \\ \hline \end{array}$	$\begin{array}{r} 804 \\ 297 \\ \hline \end{array}$	$\begin{array}{r} 603 \\ 249 \\ \hline \end{array}$	$\begin{array}{r} 507 \\ 460 \\ \hline \end{array}$	$\begin{array}{r} 801 \\ 341 \\ \hline \end{array}$

**PRACTICE SET 36, Subtraction (page 248)**

- |                      |                       |                 |
|----------------------|-----------------------|-----------------|
| 1. $\$5.00 - \$27$   | 6. $\$7.04 - \$76$    | 11. $400 - 287$ |
| 2. $\$4.00 - \$1.35$ | 7. $\$8.08 - \$94$    | 12. $903 - 267$ |
| 3. $\$7.00 - \$2.80$ | 8. $\$6.07 - \$03$    | 13. $800 - 493$ |
| 4. $\$8.00 - \$3.55$ | 9. $\$5.09 - \$2.38$  | 14. $700 - 39$  |
| 5. $\$9.00 - \$4.67$ | 10. $\$6.04 - \$3.94$ | 15. $605 - 45$  |

**PRACTICE SET 37, Subtraction (See note in Teacher's Edition, page 256.)**

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} 8790 \\ 2586 \\ \hline \end{array}$	$\begin{array}{r} 4659 \\ 2387 \\ \hline \end{array}$	$\begin{array}{r} 6825 \\ 4386 \\ \hline \end{array}$	$\begin{array}{r} 4070 \\ 2875 \\ \hline \end{array}$	$\begin{array}{r} 9600 \\ 875 \\ \hline \end{array}$	$\begin{array}{r} 4700 \\ 839 \\ \hline \end{array}$	$\begin{array}{r} 5070 \\ 2486 \\ \hline \end{array}$
2. $\begin{array}{r} 4873 \\ 796 \\ \hline \end{array}$	$\begin{array}{r} 4389 \\ 1769 \\ \hline \end{array}$	$\begin{array}{r} 6917 \\ 4008 \\ \hline \end{array}$	$\begin{array}{r} 4208 \\ 3994 \\ \hline \end{array}$	$\begin{array}{r} 6000 \\ 4785 \\ \hline \end{array}$	$\begin{array}{r} 5090 \\ 2893 \\ \hline \end{array}$	$\begin{array}{r} 4080 \\ 1975 \\ \hline \end{array}$

**PRACTICE SET 38, Subtraction (See note in Teacher's Edition, page 256.)**

- |                  |                  |                  |
|------------------|------------------|------------------|
| 1. $3478 - 1639$ | 4. $4003 - 1876$ | 7. $6705 - 4837$ |
| 2. $4687 - 2045$ | 5. $7050 - 2463$ | 8. $5430 - 2830$ |
| 3. $5076 - 3829$ | 6. $5480 - 1876$ | 9. $5006 - 2790$ |

**PRACTICE SET 39, Subtraction** (See note in Teacher's Edition, page 256.)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $\begin{array}{r} 98765 \\ - 3872 \\ \hline \end{array}$	$\begin{array}{r} 68954 \\ - 2876 \\ \hline \end{array}$	$\begin{array}{r} 56803 \\ - 2894 \\ \hline \end{array}$	$\begin{array}{r} 64387 \\ - 15674 \\ \hline \end{array}$	$\begin{array}{r} 48075 \\ - 29756 \\ \hline \end{array}$	$\begin{array}{r} 43807 \\ - 9846 \\ \hline \end{array}$
2. $\begin{array}{r} 63008 \\ - 4753 \\ \hline \end{array}$	$\begin{array}{r} 53872 \\ - 5609 \\ \hline \end{array}$	$\begin{array}{r} 76803 \\ - 12894 \\ \hline \end{array}$	$\begin{array}{r} 67075 \\ - 9807 \\ \hline \end{array}$	$\begin{array}{r} 46932 \\ - 5678 \\ \hline \end{array}$	$\begin{array}{r} 30804 \\ - 9832 \\ \hline \end{array}$
3. $\begin{array}{r} 35806 \\ - 9755 \\ \hline \end{array}$	$\begin{array}{r} 24863 \\ - 1979 \\ \hline \end{array}$	$\begin{array}{r} 47863 \\ - 9007 \\ \hline \end{array}$	$\begin{array}{r} 46085 \\ - 2385 \\ \hline \end{array}$	$\begin{array}{r} 38754 \\ - 17077 \\ \hline \end{array}$	$\begin{array}{r} 48632 \\ - 24075 \\ \hline \end{array}$

**PRACTICE SET 40, Multiplication** (page 261)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1. $\begin{array}{r} 32 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ \times 2 \\ \hline \end{array}$
2. $\begin{array}{r} 42 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$
3. $\begin{array}{r} 40¢ \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 21¢ \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 30¢ \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 24¢ \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 11¢ \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 11¢ \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 14¢ \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 40¢ \\ \times 2 \\ \hline \end{array}$
4. $2 \times 34$		7. $4 \times 21$		10. $3 \times 22$		13. $2 \times 30$	
5. $3 \times 12$		8. $3 \times 20$		11. $5 \times 10$		14. $4 \times 12$	
6. $2 \times 40$		9. $4 \times 21$		12. $2 \times 24$		15. $2 \times 13$	

**PRACTICE SET 41, Multiplication** (page 263)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1. $\begin{array}{r} \$ .40 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$ .31 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$ .43 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$ .50 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$ .32 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$ .03 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} \$ .51 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} \$ .02 \\ \times 4 \\ \hline \end{array}$
2. $\begin{array}{r} 80 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 71 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 91 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ \times 5 \\ \hline \end{array}$
3. $\begin{array}{r} 50 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 61 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ \times 5 \\ \hline \end{array}$

PRACTICE SET 42, Multiplication (page 264)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. \$35 <u>× 2</u>	\$46 <u>× 5</u>	\$38 <u>× 5</u>	\$56 <u>× 2</u>	\$15 <u>× 6</u>	\$25 <u>× 7</u>	\$12 <u>× 7</u>
2. 55 <u>× 8</u>	52 <u>× 8</u>	55 <u>× 9</u>	65 <u>× 5</u>	42 <u>× 5</u>	15 <u>× 8</u>	57 <u>× 5</u>

PRACTICE SET 43, Multiplication (page 277)

1. 221 <u>× 4</u>	312 <u>× 2</u>	411 <u>× 5</u>	833 <u>× 3</u>	922 <u>× 4</u>	511 <u>× 7</u>	244 <u>× 2</u>
2. 423 <u>× 2</u>	743 <u>× 2</u>	714 <u>× 2</u>	811 <u>× 5</u>	522 <u>× 4</u>	512 <u>× 3</u>	211 <u>× 6</u>
3. \$4.31 <u>× 2</u>	\$2.13 <u>× 2</u>	\$2.12 <u>× 4</u>	\$1.12 <u>× 3</u>	\$6.13 <u>× 2</u>	\$8.11 <u>× 5</u>	\$7.34 <u>× 2</u>

PRACTICE SET 44, Multiplication (page 278)

1. \$3.04 <u>× 2</u>	\$1.01 <u>× 5</u>	\$5.00 <u>× 5</u>	\$5.03 <u>× 2</u>	\$5.01 <u>× 3</u>	\$5.02 <u>× 4</u>	\$2.10 <u>× 8</u>
2. 802 <u>× 2</u>	601 <u>× 5</u>	502 <u>× 4</u>	801 <u>× 5</u>	500 <u>× 9</u>	603 <u>× 2</u>	510 <u>× 6</u>
3. 730 <u>× 2</u>	120 <u>× 4</u>	520 <u>× 3</u>	610 <u>× 5</u>	320 <u>× 2</u>	430 <u>× 2</u>	410 <u>× 5</u>

PRACTICE SET 45, Multiplication (page 281)

1. \$1.38 <u>× 2</u>	\$1.46 <u>× 2</u>	\$1.39 <u>× 2</u>	\$3.25 <u>× 2</u>	\$2.15 <u>× 3</u>	\$2.03 <u>× 4</u>	\$2.37 <u>× 2</u>
2. 426 <u>× 3</u>	409 <u>× 5</u>	304 <u>× 3</u>	103 <u>× 5</u>	205 <u>× 6</u>	425 <u>× 2</u>	303 <u>× 8</u>

PRACTICE SET 46, Multiplication (page 283)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1. $\begin{array}{r} \$2.43 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} \$4.15 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$4.52 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$3.41 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} \$2.43 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} \$2.34 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 685 \\ \times 4 \\ \hline \end{array}$
2. $\begin{array}{r} 316 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 398 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 178 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 475 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 456 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 789 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 682 \\ \times 4 \\ \hline \end{array}$
3. $\begin{array}{r} 234 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 432 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 279 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 345 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 425 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 453 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 687 \\ \times 4 \\ \hline \end{array}$

PRACTICE SET 47, Division (page 273)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1. $2 \overline{)80¢}$	$3 \overline{)60¢}$	$4 \overline{)84¢}$	$2 \overline{)40¢}$	$4 \overline{)80¢}$
2. $2 \overline{)\$1.84}$	$2 \overline{)\$1.24}$	$5 \overline{)\$3.55}$	$5 \overline{)\$1.55}$	$4 \overline{)\$2.08}$
3. $5 \overline{)\$2.55}$	$3 \overline{)\$1.56}$	$2 \overline{)\$1.62}$	$5 \overline{)\$3.55}$	$8 \overline{)\$3.28}$

PRACTICE SET 48, Division (page 307)

1. $2 \overline{)846}$	$2 \overline{)280}$	$3 \overline{)660}$	$4 \overline{)400}$	$6 \overline{)606}$
2. $3 \overline{)696}$	$3 \overline{)963}$	$2 \overline{)1296}$	$3 \overline{)2700}$	$3 \overline{)1860}$
3. $2 \overline{)\$4.08}$	$5 \overline{)\$45.05}$	$3 \overline{)\$24.36}$	$4 \overline{)\$12.80}$	$3 \overline{)\$21.90}$

PRACTICE SET 49, Division (page 308)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. $\frac{1}{2}$ of 64	$\frac{1}{3}$ of 696	$\frac{1}{4}$ of 804	$\frac{1}{2}$ of \$8.48
2. $\frac{1}{3}$ of 96	$\frac{1}{2}$ of 848	$\frac{1}{4}$ of 1284	$\frac{1}{3}$ of \$9.60
3. $\frac{1}{5}$ of 150	$\frac{1}{5}$ of 1550	$\frac{1}{5}$ of 4550	$\frac{1}{4}$ of \$8.80

PRACTICE SET 50, Division (See note in Teacher's Edition, page 303.)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1. $2 \overline{)85}$	$8 \overline{)169}$	$5 \overline{)307}$	$2 \overline{)187}$	$7 \overline{)149}$
2. $4 \overline{)167}$	$3 \overline{)188}$	$2 \overline{)129}$	$4 \overline{)209}$	$3 \overline{)368}$
3. $8 \overline{)409}$	$3 \overline{)275}$	$4 \overline{)129}$	$3 \overline{)278}$	$6 \overline{)249}$



# Addition

by endings, within decade, 123, 124; bridging decade, 123, 125  
 changing (carrying), 105; ones to tens, 103-106, 155, 156, 157; tens to hundreds, 160-162; changing twice, 163, 164  
 checking, 22, 70  
 column, 21-23, 35, 45, 59, 77, 79, 106, 120, 126, 127, 144, 148, 162, 226, 249, 251, 255, 267, 311  
 development of operation, 6, 7; 2-place addends, 62-67, 76, 77, 86, 87, 103-106; 3-place addends, 152, 153, 155-157, 160-164, 166; 4-place addends, 252, 253  
 estimating sums, 114, 115, 151, 169  
 facts, sums to ten, 3, 6, 7, 11, 27; to eleven, 28-30; to twelve, 32-34; to thirteen, 72-74; to fourteen, 94-96; to fifteen, 99-100; to sixteen, 117-118; to seventeen, 129-130; to eighteen, 132; tests, 19, 134; higher decade, 123-125  
 meaning and use, 6  
 practice, 7, 39, 45, 66, 67, 70, 77, 86, 89, 106, 126, 127, 144, 148, 152, 153, 156, 162, 164, 166, 211, 226, 249, 255, 267  
 relationship to other operations, division, 196, 214, 215, 224, 286, 291, 299; multiplication, 187, 210, 214, 215, 219, 259-261, 286, 297, 298; subtraction, 11, 24, 28-30, 32-34, 35, 71, 72-74, 94-96, 99-100, 117, 118, 129, 130, 132  
 sign, 6  
 sum, 6  
 zeros in, 23, 77  
 Arithmetic folder, 58, 60, 92  
 Associative law, use, 22, 45, 97, 138  
 Be your own teacher, 31, 80, 268, 309  
 Borrowing, see changing  
 Calendar, 52, 53, 139, 140  
 Cardinal numbers, 90  
 Carrying, see changing  
 Cents point (decimal point), 91  
 Changing  
   in addition, 103-106, 155-157, 160, 164, 211; called carrying, 105  
   in subtraction, 110-113, 162, 168, 226, 239, 240-244, 246-248, 251, 256; called borrowing, 111  
   in multiplication, 264-266, 281-283, 302

# Change, see money

Checking, addition, 22, 70; division, (by estimating) 279, 280; multiplication, (by adding) 260, 261; (by estimating) 279, 280  
 Check-up time, 20, 40, 61, 82, 102, 122, 139, 150, 171, 186, 213, 235, 258, 285, 313  
 Circle, 92, 107  
 Clock, 41-43, 58, 74, 75  
 Coins, 56, 57, 158, 238, 267; value, 10  
 Commutative law, use, 7, 45, 97, 138, 189, 217  
 Counting, 1-7, 14, 15, 33, 63, 85, 123, 252, 253, 287  
 Cumulative tests, see Self-help tests  
 Cup, 46, 47  
 Dates, 52-54, 100, 109, 120, 131, 139, 140, 254, 266, 267  
 Decimal point, 91  
 Degree, 50, 51, 96  
 Difference, 36, 37, 39  
 Digit, 17  
 Distributive law, use, 190, 213, 265, 297  
 Division  
   development of operation, readiness, 174, 180, 181; 1-place quotient, 193-195, 203, 204, 206, 207, 208, 220-223, 227-230, 231, 232, 269, 293, 295, 301, 303; 2-place quotient, 270-274, 308; 3-place quotient, 306-308  
   estimating quotients, 279, 280, 306  
   facts, of fives, 196-198; of twos, 223-225; of threes, 291, 292; of fours, 299, 300  
   helping numbers, 207-209, 228, 229, 295, 303  
   meaning and use, 194, 195, 199, 220, 221, 231  
   practice, 195-199, 201, 206, 209, 210, 223-225, 229, 232, 269, 271-274, 304, 306-308, 311  
   relationship to other operations, addition, 196, 214, 215, 224, 286, 291, 299; multiplication, 174, 200, 204, 232, 299; subtraction, 207, 208, 209, 303  
   remainders, 206, 207, 208, 274, 295, 303  
   sign, 195  
   zeros in, 269, 270  
 Dollar, 56, 57, 91, 158, 162, 267  
 Dollar sign, 91  
 Dozen, 33  
 Equal sign, 6

Estimating answers, in addition, 114, 115, 279, 280; in division, 279, 280, 302, 306; in multiplication, 262, 279, 280, 302; in subtraction, 116, 279, 280  
Even Numbers, 228

Fifths, 203, 204

Foot, 44, 45

Fourths, 55, 107, 301

Fractions, of an object, 55, 107; of a group, 203, 230, 293, 301;  $\frac{1}{2}$  of a number, 203;  $\frac{1}{2}$  of a number, 230;  $\frac{1}{3}$  of a number, 293;  $\frac{1}{4}$  of a number, 301

Frame arithmetic, 93, 112, 117, 130, 213  
see also Number sentences

Gallon, 47, 49

Geometric figures, 92, 107

Halves, 55, 107, 230

half-gallon, 47

half-pint, 46

half dollar, 56

Helping numbers, 207-209, 228, 229, 295

Help-yourself Cards, 18, 19

Hour, 41, 42, 43

Hundreds, 83, 151, 184, 252, 275, 306

If you have time, try these, 20, 40, 61, 82, 102, 122, 138, 150, 171, 186, 213, 235, 258, 285, 313

Inch, 44, 45

Individual differences, provision for,  
in addition, 18, 19, 28, 29, 32, 33, 72, 73, 94, 95, 99, 117, 129, 132, 134  
in division, 197, 225, 292, 300, 304  
in multiplication, 191, 218, 289, 298, 304  
in subtraction, 19, 28, 29, 32, 33, 72, 73, 94, 95, 99, 117, 129, 132, 135  
see also Be your own teacher, If you have time, try these, Just for fun, Know your facts, Optional pages, Practice for excellence, Self-help tests, Think twice, Try it

Just for fun, 20, 40, 61, 82, 122, 138, 143, 171, 245, 258, 285, 313

Keeping up in arithmetic, 38, 59, 75, 98, 119, 134, 147, 165, 177, 205, 251, 305

Know your facts, 74, 100, 267, 289, 292

## Measures

linear, 44, 45, 141

liquid, 46, 47, 108, 143, 294, 303

## Measures — Continued

temperature, 50, 51, 91

time: clock, 41-43, 58, 74, 75; Calendar, 52, 53, 139, 140

weight, 48, 49

## Mental Computation,

addition, 97; division, 270; multiplication, 260, 297; subtraction, 97

Minus sign, 8

## Money

adding, 65, 66, 103, 104, 106, 152, 155, 156, 160, 162, 164, 166, 175, 219, 238, 250, 256, 279

change, 175, 176

coins, 10, 56, 57, 158, 159, 254

dividing, 174, 180, 181, 194, 273, 300, 307, 311

multiplying, 172, 173, 178, 179, 261, 262, 264, 265, 277, 281, 282, 283, 311

reading and writing, 29, 56, 65, 91

subtracting, 68, 110, 113, 175, 236, 238, 239, 241, 242, 243, 244, 246, 247, 248, 250, 279

related to operations, addition, 65, 103, 104, 152, 155, 160; division, 174, 180, 181; multiplication, 172, 173, 178, 179, 261, 262, 277; subtraction, 68, 110, 236, 239, 242, 243, 246, 247, 264

Months, 52, 53

## Multiplication

changing in, 264, 265, 281, 282

checking, by adding, 260, 261; by estimating, 279, 302

development of operation, 1-place numbers, 172-174, 179, 180, 181, 187-189, 190, 191; 2-place numbers, 261-265; 3-place numbers, 275-278

estimating products, 262, 279, 280

facts, of fives, 187-192; of twos, 217-219; of threes, 286-290; of fours, 297, 298

meaning and use, 187-189, 214-217

relationship to other operations, addition, 172, 173, 179, 180, 181, 297; division, 174, 200, 204, 232, 299

sign, 190

test, 304

zeros in, 259, 260, 278

## Number(s)

cardinal and ordinal, 90

even and odd, 228

meaning, 2-place, 12-17, 62-64, 86, 87, 90, 105, 123; 3-place, 83-85, 88, 90, 91, 151, 184, 252, 275, 306; 4-place, 252, 253  
place value, 12-17, 83-85, 252, 253



Number(s)— *Continued*  
   reading and writing, 16, 17, 84, 90, 184, 253;  
   rounding, 114, 151  
 Number fact families, 11, 35, 200, 201  
 Number ladder, 62, 63, 76  
 Number line, 5, 7, 9, 21, 123, 151, 216, 222,  
   223, 252, 287, 299  
 Number sentences,  
   addition and subtraction, 93, 94, 95, 112,  
   117, 233  
   multiplication and division, 199, 210, 213,  
   225, 233, 291, 299  
  
 Odd numbers, 228  
 Optional pages, 31, 80, 97, 268, 283, 108, 109,  
   309  
 Ordinals, 90  
 Ounce, 48  
  
 Pint, 47  
 Place value, 12–17, 83–85, 252, 253  
 Plus sign, 6  
 Pound, 48  
 Practice  
   addition, 7, 21, 22, 66, 67, 77, 79, 87, 106,  
   115, 125, 126, 127, 148, 152, 153, 156,  
   157, 161, 164, 166, 255  
   division, 197, 204, 209, 225, 230, 272, 273,  
   274, 292, 293, 300, 301, 303, 306, 308  
   fractions, 55, 107, 204, 210, 231, 293, 301,  
   302, 308  
   measurement, 54, 79, 168, 231, 267, 301  
   mixed, 30, 34, 35, 39, 74, 96, 100, 118, 120,  
   130, 132, 144, 162, 168, 210, 211, 226,  
   249, 267, 302, 311  
   multiplication, 191, 218, 262, 263, 265, 276–  
   278, 283, 288, 289, 290, 291, 298  
   oral, 79, 97, 126, 202, 238, 245, 249, 296  
   subtraction, 9, 69, 79, 89, 112, 113, 116,  
   128, 236, 237, 239, 240, 241, 242, 244,  
   247, 248, 256, 311  
   Practice for excellence, 314–326  
   Practice for speed and accuracy, 43, 45, 49,  
   51, 89, 120, 132, 311  
 Problems, 108, 109, 131, 133, 145, 159, 167,  
   172–176, 178–181, 192, 198, 219, 220,  
   221, 231, 233, 250, 294, 307  
 Problem-solving help, 25, 26, 36, 37, 80, 142,  
   143, 146, 169, 182, 183, 192, 198, 268,  
   280, 294, 310  
 Problem test record, 60  
 Problem tests, 60, 101, 137, 170, 212, 257, 312  
  
 Quantitative thinking, 93, 112, 117, 130, 141,  
   169, 233

Rectangle, 92, 107  
 Remainder, 206, 207, 228, 229, 295, 303  
 Review  
   addition and subtraction, 135, 136, 211, 249  
   oral, 79, 158, 162, 169, 202, 226, 233, 238,  
   245, 249, 294, 296  
   written, 38, 59, 98, 119, 147, 165, 177, 205,  
   251, 305  
   see also Keeping up in arithmetic and  
   Self-help tests  
 Roman numerals, 58  
 Ruler, 44, 45  
  
 Scales, 48  
 Seasons, 130  
 Self-help tests, 1 and 2, 81; 3 and 4, 121;  
   5 and 6, 149; 7 and 8, 185; 9 and 10,  
   234; 11 and 12, 284  
 Square, 92, 107  
 Subtraction  
   changing, (borrowing) a ten to ones, 111–  
   113, 239–240; a hundred to tens, 242;  
   changing twice, 243, 246, 247  
   checking, 71  
   development of operation, 9–11, 24–26,  
   36–37; 2-place minuends, 62–64, 68, 69,  
   76, 78; 3-place minuends, 88, 110, 111,  
   236, 237, 239, 240, 242, 243, 246, 247,  
   248  
   estimating differences, 116, 169  
   facts, minuends of ten or less, 4, 7, 9, 11;  
   of eleven, 28–30; of twelve, 32, 34; of  
   thirteen, 73, 74; of fourteen, 94–96; of  
   fifteen, 99, 100; of sixteen, 117, 118; of  
   seventeen, 129, 130; of eighteen, 132  
   meaning and use, 8, 25, 26, 36, 37  
   relationship to other operations,  
   addition, 11, 24, 28–30, 32–34, 35, 71,  
   72–74, 94–96, 99–100, 117, 118, 129, 130,  
   132  
   division, 207, 208, 209, 303  
   practice, 69, 79, 89, 112, 113, 116, 128, 236,  
   237, 239, 240, 241, 242, 244, 247, 248,  
   256, 311  
   sign, 8  
   tests, 19, 135  
   zeros in, 62, 63, 64, 78, 88  
 Sum, 6  
  
 Tables, reading, 172, 174, 179, 180, 193,  
   220, 221  
 Temperature, 50–51  
 Ten-tens chart, 14, 15  
 Ten-tens counter, 12

## Tests

addition, 19  
addition facts, 134  
division facts, 304  
multiplication facts, 304  
subtraction facts, 135  
chapter, 20, 39, 61, 82, 102, 122, 139, 150,  
171, 186, 213, 235, 258, 285, 313  
cumulative, 81, 121, 149, 185, 234, 284  
problem, 60, 101, 137, 170, 212, 257, 312  
Think Twice, 6, 16, 17, 24, 28, 39, 47, 48, 62,  
67, 70, 71, 77, 79, 93, 101, 105, 107, 117,  
127, 130, 131, 137, 145, 161, 170, 179,  
181, 188, 192, 195, 199, 208, 212, 221,  
222, 229, 238, 240, 247, 248, 257, 265,  
266, 279, 290, 296, 298, 299, 300, 302,  
307  
Thermometer, 50, 51, 54, 96

Thousands, 252-254

Time, 41-43, 52, 53, 139, 140

Triangle, 92, 107

Try it, 32, 44, 46, 72, 78, 94, 107, 110, 174,  
178, 189, 190, 195, 196, 206, 232, 246,  
291, 295, 297, 301, 303

Week(s), 52, 53, 140

Weight, 48

Yardstick, 44

## Zero

in addition, 23, 77

in division, 269, 270

meaning, 12, 13, 14, 17, 27, 83, 151, 152,  
252, 253

in multiplication, 259-260, 278

in subtraction, 62, 63, 64, 78, 88

## COVER PHOTOGRAPHS

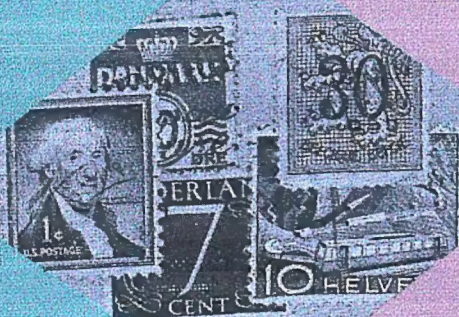
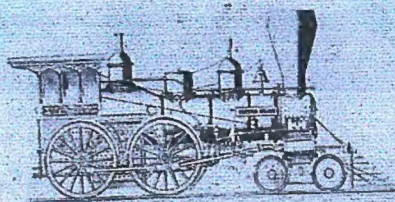
front: Philip Gendrau

back: New York Central System—Dept. of Public Relations









JOHN R. CLARK  
CHARLOTTE W. JUNGE  
CAROLINE H. CLARK  
HAROLD E. MOSE

